西门子 (中国) 有限公司

北京
北京市朝阳区望京中环南路 7 号
邮政信箱: 8543
邮政编码: 100102
电话: (010) 6472 1888
传真: (010) 6472 1036

上海
上海市浦东新区浦东大道 1 号
中国船舶大厦 7-11 楼
邮政编码: 200120
电话: (021) 5888 2000
传真: (021) 5879 6114

广州
广东省广州市先烈中路 69 号
东山广场 16-17 层
邮政编码: 510095
电话: (020) 8732 0088
传真: (020) 8732 0121

沈阳
辽宁省沈阳市和平区南京北街 206 号
沈阳城市广场写字楼第二座 14-15 层
邮政编码: 110001
电话: (024) 2334 1110
传真: (024) 2334 1125

成都
四川省成都市人民南路二段 18 号
川信大厦 18/17 楼
邮政编码: 610016
电话: (028) 619 9499
传真: (028) 619 9355

大连
辽宁省大连市西岗区新开路 99 号
珠江国际大厦 1809-1810 室
邮政编码: 116011
电话: (0411) 369 9760
传真: (0411) 360 9468

长春
吉林省长春市西安大路 9 号
香格里拉大饭店 809 室
邮政编码: 130061
电话: (0431) 898 1100
传真: (0431) 898 1087

西安
陕西省西安市长乐西路 8 号
香格里拉金花饭店 310/312 室
邮政编码: 710032
电话: (029) 324 5666
传真: (029) 324 8000

济南
山东省济南市泺源大街 22 号
中银大厦 18 楼
邮政编码: 250063
电话: (0531) 699 8118
传真: (0531) 641 3242

青岛
山东省青岛市香港中路 76 号
青岛颐中假日酒店, 写字楼 707 室
邮政编码: 266071
电话: (0532) 5735 888
传真: (0532) 5718 888

武汉
湖北省武汉市汉口江汉区
建设大道 709 号 建银大厦 18 楼
邮政编码: 430015
电话: (027) 8548 6688
传真: (027) 8548 6668

长沙
湖南省长沙市五一路 160 号
银华大厦 2218 室
邮政编码: 410011
电话: (0731) 441 1115
传真: (0731) 441 4722

福州
福建省福州市东街 98 号
东方大厦 15 楼
邮政编码: 350001
电话: (0591) 750 0888
传真: (0591) 750 0333

厦门
福建省厦门市嘉禾路 321 号
汇腾大厦 15-02 室
邮政编码: 361012
电话: (0592) 520 1408
传真: (0592) 520 4535

深圳
广东省深圳市深南大道 6008 号
深圳特区报业大厦 28 层南 A、B、C 区
邮政编码: 518009
电话: (0755) 351 6188
传真: (0755) 351 6527

重庆
四川省重庆市渝中区邹容路 68 号
大都会商厦 18 层 08A-11
邮政编码: 400010
电话: (023) 6382 8919
传真: (023) 6370 2886

昆明
云南省昆明市青年路 395 号
邦克大厦 26 楼
邮政编码: 650011
电话: (0871) 315 8080
传真: (0871) 315 8093

天津
天津市河东区津塘路 174 号
邮政编码: 300180
电话: (022) 2497 8886
传真: (022) 2439 0524

西门子有限公司 (香港)
香港湾仔港湾道 18 号中环广场 58 楼
电话: (00852) 2583 3388
传真: (00852) 2802 9802

售后服务中心
西门子工厂自动化工程有限公司 (SFAE)
北京市朝阳区东直门外京顺路 7 号
邮政编码: 100028
电话: (010) 6461 0005
传真: (010) 6463 2976
E-mail: Siemens.Service@sfae.siemens.com.cn

上海西门子工业自动化有限公司 (SIAS)
上海市延安西路 1599 号怡翔大楼 5 层
邮政编码: 200050
电话: (021) 6213 2050
传真: (021) 6213 5538

技术培训 热线电话
北 京: (010) 6472 1888-3718
上 海: (021) 6213 2050-306
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武 汉: (027) 8548 6688-6601
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技术支持
热线: (010) 6473 8566
传真: (010) 6473 1096
E-mail: ascs@pek1.siemens.com.cn

用户咨询热线
电话: (010) 6473 1919
E-mail: calldesk@pek1.siemens.com.cn

Siemens Ltd., China

Beijing
7, Wangjing Zhonghuan Nanlu Chaoyang District, Beijing 100102, P.R. China
P.O.China: 8543
Tel: (010) 6472 1888
Fax: (010) 6472 1036

Shanghai
7-11/F Floor, China Marine Tower 1, Pudong Avenue, Shanghai 200120, P.R. China
Tel: (021) 5888 2000
Fax: (021) 5879 6114

Guangzhou
16-17/F, Dongshan Plaza, 69 Xianlie Zhonglu, Guangzhou 510095, Guangdong Province, P.R. China
Tel: (020) 8732 0088
Fax: (020) 8732 0121

Shenyang
City Plaza Shengyang Office Tower 2, 206 Nanjing North Street, Heping District, Shengyang 110001, Liaoning Province, P.R. China
Tel: (024) 2334 1110
Fax: (024) 2334 1125

Chengdu
18/17F, Chuanxin Manion, 18 Sec. 2, Remin S. Road, Chengdu 610016, Sichuan Province, P.R. China
Tel: (028) 619 9499
Fax: (028) 619 9355

Dalian
Rm. 1809-1810, Dalian Pearl River International Building 99, Xin Kai Road, Xigang District, Dalian 116011, Liaoning Province, P.R. China
Tel: (0411) 369 9760
Fax: (0411) 360 9468

Changchun
Rm. 809, Changchun Shangri-la Hotel 9, Xi 'an Avenue Changchun 130061, Jilin Province, P.R. China
EAST Region
Tel: (0431) 898 1100
Fax: (0431) 898 1087

Xi'an
Rm. 310/312 Shangri-La Golden Flower 8, Chang Le Road West Xian 710032, P.R. China
NORTHEAST Region
Tel: (029) 324 5666
Fax: (029) 324 8000

Jinan
18/F, Bank of China Tower, 22, Luo Yuan Street, Jinan 250063, Shangdong Province, P.R. China
Tel: (0531) 699 8118
Fax: (0531) 641 3242

Qingdao
Rm. 707, Office Building, Holiday Inn Qingdao, No.76, Xiang Gang Zhong Road, Qingdao 266071, Shandong Province, P.R. China
Tel: (0532) 573 5888
(0532) 571 8888
Fax: (0532) 576 9963

Wuhan
18/F, Jian Ying Tower No. 709 Jian She Avenue, Jianghan District Hankou, Wuhan 430015, Hubei, P.R. China
SOUTH Region
Tel: (027) 8548 6688
Fax: (027) 8548 6668

Changsha
2218, Yinhua Building, No. 160 Wuyi Road, Changsha 41001, Hunan Province, P.R. China
Tel: (0731) 441 1115
Fax: (0731) 441 4722

Fuzhou
15/F, Fujian Orient Tower, 98 Dongjie, Fuzhou 350001, Fujian Province, P.R. China
Tel: (0591) 750 0888
Fax: (0591) 750 0333

Xiamen
15F, Unit-02 Huiteng Metropolis 321 Jiahe Road, Xiamen 361012, P.R. China
Tel: (0592) 520 1408
Fax: (0592) 520 4535

Shenzhen
Unites ABC, 28/F, South, Shenzhen Special Zone Press Tower, No. 6008 Shennan Main Road, Shenzhen 518009, Guangdong Province, P.R. China
Tel: (0755) 351 6188
Fax: (0755) 351 6527

Chongqing
Room 08A-11, 18th Floor, Metropolitan Business Mansion, 68 Zou Rong Road, Yuzhong District, Chongqing 400010, P.R. China
Tel: (023) 6382 8919
Fax: (023) 6370 2886

Kunming
26/F, Bank Building 395 Youth Road, Kunming 650011, Yunnan Province, P.R. China
Tel: (0871) 315 8080
Fax: (0871) 315 8093

Tianjin
No. 174, Jin Tang Road, He Dong District, Tian Jin 300180, P.R. China 300180
Tel: (022) 2497 8886
Fax: (022) 2439 0524

Siemens Ltd., Hong Kong
58 Floor, Central Plaza, 18 Harbour Road Wanchai, Hong Kong
Tel: (00852) 2583 3388
Fax: (00852) 2802 9802

After Sales Service Center
SFAE
7, Jingshun Road, Dongzhimen Wai Chaoyang District Beijing 100028, P.R. China
Tel: (010) 6461 0005
Fax: (010) 6463 2976
E-mail: Siemens.Service@sfae.siemens.com.cn

SIAS
5/F, Yixiang Building 1599, Yan'an Xi Road Shanghai 200050, P.R. China
Tel: (021) 6213 2050
Fax: (021) 6213 5538

Training Hotline
Beijing: (010) 6472 1888-3718
Shanhai: (021) 6213 2050-306
Guangzhou: (020) 8732 0088-2279
Wuhan: (027) 8548 6688-6601
Haerbin: (0451) 641 3050
Chongqing: (023) 6382 8919-25

Documentation
Tel: (010) 6472 1888-3726

Customer Support
Hotline: (010) 6473 8566
Fax: (010) 6473 1096
E-mail: ascs@pek1.siemens.com.cn

A&D Calldesk
Tel: (010) 6473 1919
E-mail: calldesk@pek1.siemens.com.cn

www.ad.siemens.com.cn

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低压控制产品与系统

电动机控制元器件产品目录 2001

SIEMENS

低压控制产品与系统

Low-Voltage Controlgear, Switchgear and Systems

电动机控制元器件产品目录 2001

Motor Control Products Catalog 2001



创新科技的开关装置

INNOVATIVE SWITCHGEAR

样本索引
Catalog Index

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用于电动机的开关和装置
Switchgear for Load Feeders

断路器最大至 80A Circuit - breakers up to 80A







3VU13 up to 20/25 A

3 极断路器 3 - pole circuit - breakers

3VU16 up to 52/63 A

3 极断路器 3 - pole circuit - breakers

* 3VF1 up to 63/80 A

3 极断路器 3 - pole circuit - breakers

* 自 2000 年 11 月 30 日起，3VF1 断路器改为进口供应。
Since Nov. 30, 2000, 3VF1 circuit breaker will be imported.

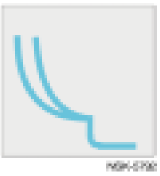
说明 Description

3VU13, 3VU16, 3VF1 断路器是额定电流最大至 80A 的紧凑型断路器。根据限流原理进行工作。可用于电机或其它负荷的起动，断开及过载和短路保护；3VU13 和 3VU16 还可用作电动机断相保护。用于电机或设备保护时，上述断路器都配备过电流瞬时脱扣器和反时限延时过载脱扣器。由于起动器组合装置本身具有过载保护，因此用于起动器组合的 3VU16 和 3VF1 只安装过电流瞬时脱扣器。断路器和接触器可组合成无熔断器型组合起动装置。

3VU13, 3VU16 和 3VF1 断路器适用于任何一种气候。按封闭房间内良好操作环境下进行设计(例如：无尘埃，腐蚀性气体)。在有尘埃和潮湿房间里安装使用前，它们必须合理地进行密封、处理。断路器的各种工作参数：允许环境温度，最大通断能力，脱扣动作电流和其它限制性操作参数，在技术数据与脱扣特性中给出。

The 3VU13, 3VU16 and 3VF1 circuit-breakers are compact circuit-breakers for currents up to 80 A which operate according to the current limiting principle. The devices are used for switching and protecting motors or other loads. They are fitted with instantaneous overcurrent releases and inverse-time delayed overload relay, the 3VU16 and 3VF1 can also be supplied with instantaneous overcurrent releases only. Circuit-breakers and contactors can be combined to form fuseless starter combinations.

The 3VU13, 3VU16 and the 3 VF1 circuit-breakers are suitable for use in any climate. They are designed for operation in enclosed rooms, under good operating conditions (e.g. no dust, corrosive steam or damaging gases). They must be suitably encapsulated before being installed in dusty and humid rooms. The standards to which the breakers have been constructed, permissible ambient temperatures, maximum making and breaking capacity, tripping currents and other limiting operational conditions, are given in the technical data and tripping characteristics.



3VU13
3VU16
3VF1

用于电动机保护断路器
Circuit-breakers for motor protection

3VU13	0.1~25A
3VU16	1~52A
3VF1	6.3~63A

这些断路器的特征曲线反映了电动机的过载及短路保护特性。

反时限过负荷脱扣器可根据被保护电机的额定电流进行整定，而瞬时过流脱扣装置是按照额定电流 12 倍预设好的以保证躲过电动机起动电流。

The characteristic curves of these circuit-breakers are specially laid-out for the overload and short-circuit protection of motors.

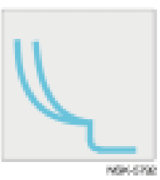
The inverse-time delayed releases (“a releases”) are adjustable for setting the rated current of the motors to be protected. The instantaneous short-circuit releases (“n releases”) are fixed-set to 12 times the value so as to assure faultless starting of the motors.

用于变压器保护的断路器
Circuit-breakers for transformer protection

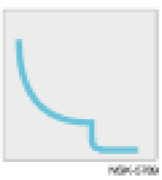
3VU13 40-1T.00	0.1~20A

这些断路器用以对具有高浪涌电流的控制变压器原边进行保护。它们带有可调整的过载脱扣装置和预设好的瞬动短路电流脱扣装置。瞬时脱扣动作电流整定在19倍工作电流，这保证了具有浪涌电流峰值达30倍额定电流的变压器得以正常工作。对于具有低涌入电流的变压器，例如：西门子变压器，并不需要这种型式的断路器。

The circuit-breakers for line-side protection of control transformers with a high inrush current have an adjustable delayed overload release and a fixed-set instantaneous short-circuit release that only releases instantaneously at 19 times the current. This enables transformers to be protected that have inrush peak values up to 30 times the rated current. For transformers with low inrush current, e.g. Siemens transformers, this version is not necessary.



3VU13
3VU16



3VF1

用于线路保护的断路器
Circuit breakers for plant protection

3VU13	0.1~25A
3VU16	1~63A
3VF1	10~63A

这些断路器用来对电缆、导体、电气设备进行过载和短路保护。具有整定好的或可调整的过载、短路脱扣装置来达到优化配电系统适应性的目的。

The circuit-breakers are used for the protection of cables, conductors and plant equipment against thermal overload and short-circuit.

Depending on the version, there are fixed-setting or adjustable overload and short-circuit releases for optimized adaptation to the distribution system.



3VU16
3VF1

用于起动组合装置的断路器
Circuit-breakers for starter combinations

3VU16	1.6~52A
3VF1	10~80A

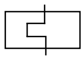
在由接触器和热继电器组成的起动组合装置中，这些型号断路器用来对这种组合装置进行短路保护，具有整定好的短路脱扣装置，但不带过载脱扣装置。

In starter combinations consisting of a contactor and overload relay, these circuit-breakers are used for short-circuit protection of these combinations.

They have fixed-setting short-circuit releases, but no overload releases.

3VU13 断路器， 至 25A
3VU13 Circuit-Breakers, up to 25A

选型与订货数据 Selection and ordering data

 3VU13	额定电流 Rated current I_n	电动机输出功率 Motor output	整定电流范围 Setting Range: 热过载脱扣器 Thermal overload releases 	整定电流范围 Setting Range: 瞬时过电流脱扣器 Instantaneous overcurrent releases I >>	订货号 Order No.	重量 Weight approx.
	A	kW	A	A		kg

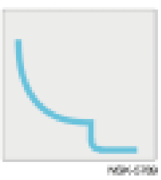
用于电动机和线路保护的断路器 Circuit-breakers for motor and plant protection

	A	kW	A	A	Order No.	kg
	0.16		0.1-0.16	1.9	3VU1340 -. MB00	0.29
	0.24	0.06	0.16-0.24	2.9	-. MC00	
	0.4	0.09/0.12	0.24-0.4	4.8	-. MD00	
	0.6	0.12/0.18	0.4-0.6	7.2	-. ME00	
	1	0.25	0.6-1	12	3VU1340 -. MF00	
	1.6	0.37/0.55	1-1.6	19	-. MG00	
	2.4	0.75	1.6-2.4	29	-. MH00	
	3.2	1.1	2-3.2	38	-. NH00	
	4	1.1/1.5	2.4-4	48	3VU1340 -. MJ00	
	5	1.5/2.2	3.2-5	60	-. NJ00	
	6	2.2	4-6	72	-. MK00	
	8	3	5-8	96	-. NK00	
	10	3/4	6-10	120	3VU1340 -. ML00	
	13	4/5.5	8-13	156	-. NL00	
	16	7.5	10-16	190	-. MM00	
	20	7.5	14-20	240	-. MN00	
	25	11	18-25	300	-. MP00	

↑

无辅助触头 No auxiliary contacts 0
断路器内所含辅助触头 1NO+1NC ··· 1
with auxiliary contacts 2NO ··· 2
integrated in the circuit-breaker 2NC ··· 3

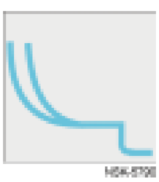
用于熔丝监控的断路器 Circuit-breakers for fuse monitoring

	A	kW	A	A	Order No.	kg
	0.2	-	0.2	1.2	3VU1340 -. MS00	

↑

无辅助触头 No auxiliary contacts 0
断路器内所含辅助触头 1NO+1NC ··· 1
with auxiliary contacts 2NO ··· 2
integrated in the circuit-breaker 2NC ··· 3

用于具有高浪涌电流变压器原边保护的断路器 Circuit-breakers for line-side protection of transformers with high inrush current

	A	kW	A	A	Order No.	kg
	0.16	-	0.1 - 0.16	2.9	3VU1340 -.TB00	0.29
	0.24		0.16 - 0.24	4.8	-.TC00	
	0.4		0.24 - 0.4	7.2	-.TD00	
	0.6	-	0.4 - 0.6	12	3VU1340 -.TE00	
	1		0.6 - 1	15	-.TF00	
	1.6		1 - 1.6	29	-.TG00	
	2.4	-	1.6 - 2.4	48	3VU1340 -.TH00	
	4		2.4 - 4	72	-.TJ00	
	6		4 - 6	120	-.TK00	
	10	-	6 - 10	190	3VU1340 -.TL00	
	16		10 - 16	300	-.TM00	
	20		14 - 20	300	-.TN00	

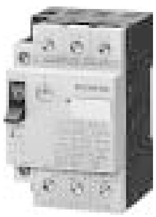
↑

断路器内所含辅助触头 1NO+1NC ··· 1
with auxiliary contacts
integrated in the circuit-breaker

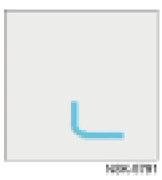
注：电动机输出功率为 AC50Hz 400V 时标准 4 极电机推荐值
Recommended value for standard 4-pole motors at AC50Hz 400V.

电动机起动数据与电动机保护的设定值有关
The start-up data and ratings for the motor to be protected are relevant

选型与订货数据 Selection and ordering data

	额定电流 Rated current I_n	电动机输出功率 Motor output	整定电流范围 Setting Range 热过载脱扣器 Thermal overload releases	整定电流范围 Setting Range 瞬时过电流脱扣器 Instantaneous overcurrent releases $I>>$	订货号 Order No.		重量 Weight approx.
 3VU13	A	kW	A	A			kg
用于电动机和线路保护的断路器 Circuit-breakers for motor and plant protection							
	1.6	0.37/0.55	1-1.6	19	3VU1640	-. MG00	0.76
	2.4	0.75	1.6-2.4	29		-. MH00	
	4	1.1/1.5	2.4-4	48		-. MJ00	
	6	2.2	4-6	72		-. MK00	
	10	3/4	6-10	120	3VU1640	-. ML00	
	16	5.5/7.5	10-16	190		-. MM00	
	25	11	16-25	300		-. MN00	
	32	15	22-32	380	3VU1640	-. MP00	
	40	18.5	28-40	480		-. MQ00	
	52	22	36-52	600		-. MR00	
用于线路保护的断路器 Circuit-breakers for plant protection							
	63	-	45-63	600	3VU1640	-. LS00	0.76

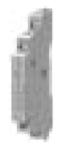
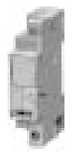
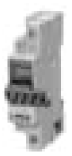
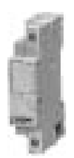
无辅助触头 No auxiliary contacts ··· 0
断路器内所含辅助触头 with auxiliary contacts integrated in the circuit-breaker
1NO+1NC ··· 1
2NO ··· 2
2NC ··· 3

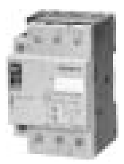
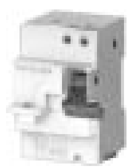
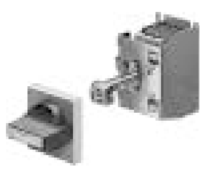
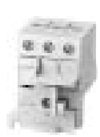
	额定电流 Rated current I_n (A)	电动机输出功率 Motor output (kW)	热过载脱扣器 Thermal overload releases (A)	瞬时过电流脱扣器 Instantaneous overcurrent releases (A)	订货号 Order No.		重量 Weight approx. (kg)
用于起动器组合的断路器 Circuit-breakers for starter combinations							
	1.6	0.37/0.55	无热过载脱扣器 without thermal overload releases	19	3VU1640	-. CG00	0.76
	2.4	0.75		29		-. CH00	
	4	1.1/1.5		48		-. CJ00	
	6	2.2		72	3VU1640	-. CK00	
	10	3/4		120		-. CL00	
	16	5.5/7.5		190		-. CM00	
	25	11		300	3VU1640	-. CN00	
	32	15		380		-. CP00	
	40	18.5		480		-. CQ00	
	52	22		600	3VU1640	-. CR00	

无辅助触头 No auxiliary contacts ··· 0
断路器内所含辅助触头 with auxiliary contacts integrated in the circuit-breaker
1NO+1NC ··· 1
2NO ··· 2
2NC ··· 3

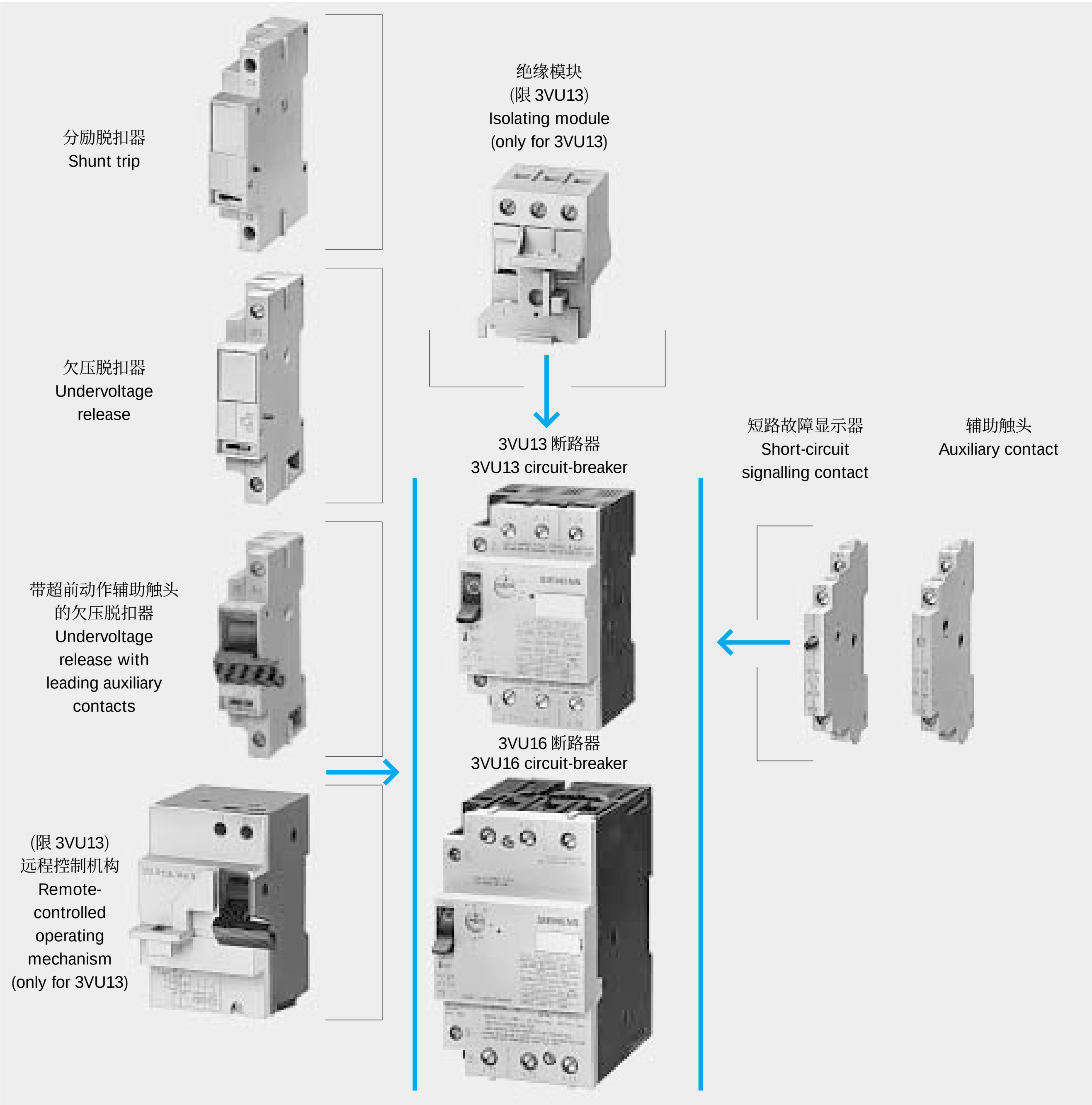
注：电动机输出功率为 AC50Hz 400V 时标准 4 极电机推荐值
Recommended value for standard 4-pole motors at AC50Hz 400V.

3VU 的附件 Accessories for 3VU

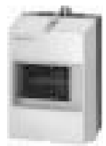
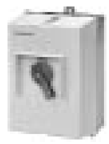
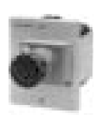
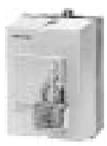
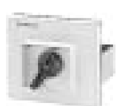
3VU9	名称 Name	宽度 Width 1TE =18mm	结构 Types		订货号 Order No.	重量 Wight approx. kg
组合 3VU 右侧： 辅助触头和／或 短路故障显示器 3VU 左侧： 欠压脱扣器或 分励脱扣器或 远距离操作机构(仅限 3VU13)			Combinations Right hand side of 3VU: An auxiliary contact and/or a short-circuit signalling contact Left hand side of 3VU: Undervoltage release or Shunt release or Remote-controlled mechanism (for 3VU13)			
 3VU9 131-3AA00	辅助触头 Auxiliary contact for 3VU13 and 3VU16	0.5	标识数 11Z Identification number 11Z 1NO+1NC		3VU9 131-3AA00	0.04
 3VU9 131-7AA00	短路故障显示器 Short-circuit indicator switch for 3VU13 and 3VU16	0.5	标识数 11Z Identification number 11Z 1NO+1NC		3VU9 131-7AA00	0.04
 3VU9 132-0AB15	欠压脱扣器 Undervoltage release for 3VU13 and 3VU16	1	AC 50Hz	AC 60Hz		
			230V		3VU9 132 -0AB15	0.11
			240V		-0AB25	
			400V		-0AB17	
			415V		-0AB18	
				120V	-0AB23	
				208V	-0AB24	
				240V	-0AB26	
 3VU9 132-0AB35	带超前动作辅助触头的 欠压脱扣器 Undervoltage release with two leading auxiliary contacts for 3VU13 and 3VU16	1	AC 50Hz	AC 60Hz		
			230V		3VU9132 -0AB35	0.13
			240V		-0AB45	
			400V		-0AB37	
			415V		-0AB38	
				120V	-0AB43	
				208V	-0AB44	
				240V	-0AB46	
 3VU9 132-0AB55	分励脱扣器 Shunt release for 3VU13 and 3VU16 直流控制最大励磁时间：5s Permissible load duration at DC voltage max. 5s	1	AC 50Hz	AC 60Hz		
			24V		3VU9 132 -0AB50	0.11
			230V		-0AB55	
			240V		-0AB65	
			400V		-0AB57	
			415V		-0AB58	
				120V	-0AB63	
				208V	-0AB64	
				240V	-0AB66	
			DC			
			24-60V		3VU9 132 -0AB50	
			110-240V		-0AB73	

3VU13 的附件					Accessories for 3VU13
3VU9	名称 Name	宽度 Width 1TE =18mm	结构 Types	订货号 Order No.	重量 Wight approx. kg
限流器(提高短路分断能力到 50kA, AC 50Hz 415V) Limiter to increase the short-circuit breaking capacity to 50kA at 50Hz 415V					
 3VU9 138-2AB00	限流器 Limiter	3	额定电流 I_n: 56A Rated current I_n: 56A 辅助触头:1NO+1NC Auxiliary contacts 1NO+1NC	3VU9 138-2AB00	0.29
远程控制机构(远距离接通和断开断路器) Remote controlled operating mechanism for making and breaking					
 3VU9 138-1AA14	远程控制机构 Remote controlled operating mechanism	3	AC50/60 Hz 220 to 240V	3VU9 138-1AA14	0.40
门联锁操作机构(带加长轴可实现开门断电功能) Door-coupling rotary operating mechanisms,complete,with extension shaft					
	门联锁操作机构 (黑色旋钮, 灰色显示面板) Door-coupling rotary operating mechanism (black knob, grey indicator plate)	-	在断开位置可上锁 防护等级 IP65 Lockable in OFF position Degree of protection IP65	3VU9 133-1PA01	0.85
	门联锁操作机构 (红色旋钮, 黄色显示面板) Door-coupling rotary operating mechanism (red knob, yellow indicator plate)		在断开位置可上锁 防护等级 IP65 Lockable in OFF position Degree of protection IP65	3VU9 133-1PA02	0.85
绝缘模块 Isolator module					
 3VU9 138-3AA00	绝缘模块 Isolator module	-	适用于 3VU13 for fitting to 3VU13 可上锁 lockable	3VU9 138-3AA00	0.04

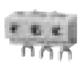
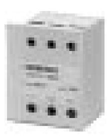
3VU 的附件 Accessories for 3VU



3VU13 的附件 Accessories for 3VU13

3VU9	名称 Name	宽度 Width 1TE =18mm	结构 Types	订货号 Order No.	重量 Wight approx. kg
直接操作断路器的防护罩 Housings for direct actuation of circuit-breakers					
 3VU9 133-0CA00	防护罩 Moulded-plastic housing	3 1+3	防护等级 IP40 带零线和地线端子 Degree of protection IP40 with N and PE terminal	3VU9 133-0AA00 3VU9 133-0BA00	0.25 0.25
		1+3+1	防护等级 IP40 Degree of protection IP40	3VU9 133-0CA00	0.30
带旋转操作机构的防护罩，带旋转操作机构的面板 Housings with rotary operating mechanism,front plates with rotary operating mechanism					
 3VU9 133-2GA00	防护罩 Moulded-plastic housing	3 1+3	防护等级 IP54 带零线和地线端子 Degree of protection IP54 with N and PE terminal	3VU9 133-2CA00 3VU9 133-2EA00	0.25 0.30
		1+3+1	防护等级 IP55 Degree of protection IP55	3VU9 133-2GA00	0.32
 3VU9 133-2LA00	用于安装在台面下的防护罩 Moulded-plastic housing for under-table mounting	1+3	防护等级 IP55 带零线和地线接线端子 Degree of protection IP55 with N and PE terminal	3VU9 133-2LA00	0.34
 3VU9 133-2SA00 with 3VU9 133-3AA01	嵌装防护罩 Moulded-plastic flush-mounting housing	3	防护等级 IP00, 正面防护等级 IP54 带零线和地线接线端子 Degree of protection IP00; front side IP54, with N and PE terminal	3VU9 133-2QA00 3VU9 133-2SA00	0.20 0.23
		1+3+1	防护等级 IP00, 正面防护等级 IP54 Degree of protection IP00; front side IP54	3VU9 133-2UA00	0.25
 3VU9 133-2GA00 with 3VU9 133-3KA00	急停开关 EMERGENCY - STOP handle red		可以重新接通 Reclosing possible	3VU9 133-3AA01	
	锁具(用于旋转操作机构) Locking device for rotary operating mechanism		可带 3 个挂钩 最大直径为 8mm 的挂锁 For 3 padlocks with Max 8mm shackle diameter	3VU9 133-3KA00	0.05
 3VU9 133-2NB00	带手柄的面板(旋转操作机构用于任何防护罩中操作 3VU13 断路器) Moulded-plastic front plate with holder Rotary operating mechanism for actuating the 3VU13 circuit-breaker in any housing	3 1+3 1+3+1	3VU13 断路器能被卡装在手柄上 防护等级 IP55(正面) A 3VU13 circuit-breaker can be snapped onto the holder Degree of protection IP55 (front side)	3VU9 133-2JB00 3VU9 133-2LB00 3VU9 133-2NB00	0.08 0.14 0.05

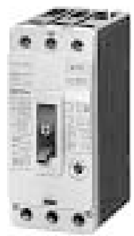
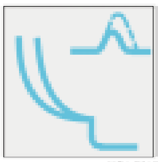
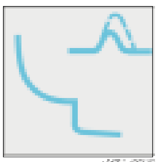
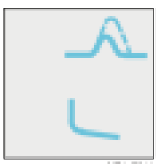
3VU13 的附件 Accessories 3VU13

3VU9	名称 Name	宽度 Width 1TE =18mm	结构 Types	订货号 Order No.	重量 Wight approx. kg
绝缘三相母线系统用于 3VU13 断路器，最大负载 63A，额定电压 690V Insulated three-phase busbar system for feeding-in several 3VU13 circuit-breakers, maximum load 63A, rated voltage 690V					
 3VU9 135-1AB05	三相母线排 模数空间 3TE Three-phase busbars modular spacing 3TE	——	用于 2 台断路器 For 2 circuit-breakers 用于 3 台断路器 For 3 circuit-breakers 用于 4 台断路器 For 4 circuit-breakers 用于 5 台断路器 For 5 circuit-breakers	3VU9 135 -1AB02 -1AB03 -1AB04 -1AB05	0.05 0.05 0.10 0.12
	三相母线排 模数空间 4TE Three-phase busbars modular spacing 4TE	——	用于 2 台断路器带辅助脱扣器或辅助触头 For 2 circuit-breakers with aux, release or aux, contacts 用于 4 台断路器带辅助脱扣器或辅助触头 For 4 circuit-breakers with aux, release or aux, contacts	3VU9 135 -1KA02 -1KA04	0.6 0.12
 3VU9 135-1BB00  3VU9 135-1BB01	三相进线端子 (从上面接线) Three-phase feed-in teminal connection from above	——	导线尺寸 Conductor sizes 单股线或多股线：6-25mm² soild or stranded: 6 to 25mm² 带端子的细多股线：4-16mm² finely-stranded with end sleeve: 4 to 16mm² Type Ⅰ Type Ⅱ	3VU9 135 -1BB00 -1BB01	0.05 0.03
 3VU9 135-1BB03	三相进线端子 (从下面接线) Three-phase feed-in teminal connection from below	——	导线尺寸 Conductor sizes 单股线或多股线：2.5-25mm² soild or stranded: 2.5 to 25mm² 带端子的细多股线：2.5-16mm² finely-stranded with end sleeve: 2.5 to 16mm² 能被安装在卡轨上 To be snapped onto the mounting rail	3VU9 135 -1BB03	0.05
 3VU9 135-1GB00	带标签的防护罩 Cover for tags	——	用于不安装断路器时防止电击 protection against shock when the circuit-breaker is omitted	3VU9 135 -1GB00	0.01

3VU16 的附件　　Accessories for 3VU16

3VU9	名称 Name	宽度 Width 1TE =18mm	结构 Types	订货号 Order No.	重量 Wight approx. kg
门联锁操作机构(带加长轴可实现开门断电功能) Door-coupling rotary operating mechanisms,complete,with extension shaft					
	门联锁操作机构 (黑色旋钮，灰色 显示面板) Door-coupling rotary operating mechanism black knob, grey label	5	在断开位置可上锁 防护等级 IP 65 Lockabe in OFF position Degree of protection IP 65	3VU9 163-1PA01	1.0
	门联锁操作机构 (红色旋钮，黄色 显示面板) Door-coupling rotary operating mecbanism red knob, yellow label	5	在断开位置可上锁 防护等级 IP 65 Lockabe in OFF position Degree of protection IP 65	3VU9 163-1PA02	1.0
防护罩 Housings					
	防护罩 (带面板，旋转操作机构) Moulded-plastic housing complete with moulded -plastic front plate and rotary operating mechanism	1+4+1	防护等级 IP 55 带零线接线端子 Degree of protection IP55 with N terminal	8HP2 771	1.7

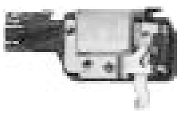
选型与订货数据 / Selection and ordering data

	额定电流 Rated current I_n	电动机输出功率 Motor output	整定电流范围 Setting Range: 热过载脱扣器 Thermal overload releases	整定电流范围 Setting Range: 瞬时过电流脱扣器 Instantaneous overcurrent releases	订货号 Order No.	重量 Weight approx.
 3VF1	A	kW	A	A		kg
用于电动机保护的断路器 Circuit-breakers for motor protection						
 NSI-5016	10	3/4	6.3-10	120	3VF12 31 [1] -1DB11 - 0AA0 [2]	1.2
	16	5.5/7.5	10-16	192	-1DC11 - 0AA0 [2]	
	25	11	16-25	300	-1DD11 - 0AA0 [2]	
	32	15	22-32	380	-1DE11 - 0AA0 [2]	
	40	18.5	28-40	480	3VF12 31 -1DG11 - 0AA0 [2]	
	50	22	36-50	600	-1DH11 - 0AA0 [2]	
	63	30	45-63	760	-1DK11 - 0AA0 [2]	
用于线路保护的断路器 Circuit-breakers for plant protection						
 NSI-5015	10	-	10	80	3VF12 31 -1FB41 - 0AA0 [2]	1.2
	16		16	128	-1FC41 - 0AA0 [2]	
	25		25	200	-1FD41 - 0AA0 [2]	
	32		32	256	-1FE41 - 0AA0 [2]	
	40	-	40	320	3VF12 31 -1FG41 - 0AA0 [2]	
	50		50	400	-1FH41 - 0AA0 [2]	
	63		63	504	-1FK41 - 0AA0 [2]	
用于起动器组合的断路器 Circuit-breakers for starter combinations						
 NSI-5011	up to 10	3/4	无热过载	120	3VF12 31 -1DB21 - 0AA0 [2]	1.2
	up to 16	5.5/7.5	脱扣器	192	-1DC21 - 0AA0 [2]	
	up to 25	11	without	300	-1DD21 - 0AA0 [2]	
	up to 32	15	thermal	420	-1DF21 - 0AA0 [2]	
	up to 40	18.5	overload	480	3VF12 31 -1DG21 - 0AA0 [2]	
	up to 56	22	releases	672	-1DJ21 - 0AA0 [2]	
	up to 65	30		780	-1DL21 - 0AA0 [2]	
	up to 80	37		960	-1DM21 - 0AA0 [2]	

1) 3VF12 31 系列产品为德国进口产品。
   3VF12 31, are imported from Germany.
2) -0AA0- 为无内部附件，内部附件为单独订货，见 1/11。
   -0AA0- means there is no internal accessories. The internal accessories should be ordered separately. See page 1/11.

注：电动机输出功率为 AC 50Hz 400V 时标准 4 极电机推荐值。电动机起动数据与电动机保护的设定值有关。
Recommended value for standard 4-pole motors at AC 50 Hz 400 V. The start-up data and ratings for the motor to be protected are relevant.

3VF1 的附件 Accessories for 3VF1

	额定控制电源电压 U_s / 频率 Rated control supply voltage U_s / frequency		订货号 Order No.
	欠压脱扣器 Undervoltage releases		
欠压脱扣器 / 分励脱扣器 Undervoltage release/shunt tirp	带螺钉接线端子 with screw terminals		
	AC 50Hz	AC 60Hz	
	93-110V	110-127V	3VF9 121 -3CE40
	110-127V	125-144V	-3CF40
	-	200-230V	-3CG40
	208-240V	240-274V	3VF9 121 -3CH40
	330-380V	380-440V	-3CJ40
	380-440V	440-500V	-3CK40
	500-550V	560-642V	-3CL40
	对于 AC 60Hz 110~600V 具有 E 和 B 标志。 Versions for AC 60Hz 110 to 600V are approved by E and B		
	分励脱扣器 Shunt trips		
	带螺钉接线端子 with screw terminals		
	AC 50/60Hz		
	110-127V		3VF9 121 -3JF40
	208-240V		-3JG40
	380-415V		-3JH40
	440V		-3JJ40
	500-525V		-3JK40
	DC 24V		3VF9 121 -1JP40
	DC48V		-1JQ40
	DC60V		-1JR40
	DC110V		-1JS40
	DC220V		-1JT40
	最长通电时间 5 秒 Max. Command duration 5s		
	对于 AC 60Hz 110~600V 具有 E 和 B 标志。 Versions for AC 60Hz 110 to 600V are approved by E and B		

	额定控制电源电压 U_s / 频率 Rated control supply Voltage U_s / frequency	订货号 Order No.
	辅助开关 Auxiliary switches (HS) 报警开关 Alarm switches(AS)	
辅助开关 Auxiliary switches	带 1 米连接引线 with connecting lead length: 1m 1 HS (1NO+1NC) 1 AS (1NO+1NC)	3VF9 122 -1BD40 -1GD40
 带螺钉接线端子辅助开关 Auxiliary Switch with screw terminals	带螺钉接线端子 with screw terminals 1 HS (1NO+1NC)	3VF9 122 -1BE40

举例 Example

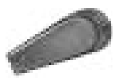
线路保护用 3VF1 231
额定电流 25A
附件：辅助触头，220V AC 分励脱扣器
Line protection 3VF1 231
In = 25A
Accessories: one auxiliary switches shunt release 220V AC

3VF1 231 - 1FC41 - 0AA0 + 3VF9 121 - 3JH40, 3VF9 122 - 1BD40

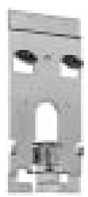
3VF1 的附件 Accessories 3VF1



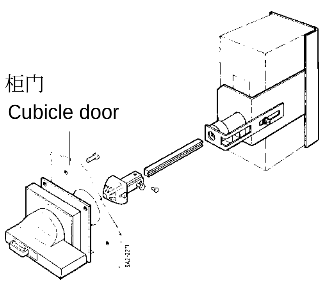
3VE9 423-5AA00



3VF9 123-1AA00



3VE9 427-7AA01



3VF9 123-1EA00

结构 Type	订货号 Order No.	重量 Weight approx. kg
铁壳防护罩，防护等级 IP54 Sheet-steel housing, degree of protection IP54		
铁壳防护罩(整套) Sheet-steel housing, complete	3VE9 423 - 5AA00	1.6
可作为急停开关：红色按钮和黄色面板 Also required for use as an EMERGENCY STOP switch: Red Knob and yellow backing plate	3VE9 427 - 6AA00	0.02
锁具(断路器可锁在断开位置) Locking device (Circuit-breaker lockable in off-position)	3VE9 427 - 1AA00	0.05
锁具 Locking device		
锁具(用于扭力手柄) Locking device for toggle handle	3VF9 123 - 1VC00	0.05
直接安装在断路器上的旋钮转手柄 Rotary drives for direct mounting on circuit-breakers		
黑色旋钮 Black knob	3VF9 123 - 1AA00	0.05
直接安装在导轨上的适配器 Adapter for snapping onto standard mounting rail in acc. with DIN EN50 023-75 × 25	3VE9 427 - 7AA01	0.05
门联锁操作机构(用于安装在门或防护罩上) Rotary drive complete fitting in doors and covers 可用 3 把挂锁 Lockable with max 3 padlocks 具有门联锁功能 Door interlock 防护等级 IP 65. Degree of protection IP65 全部绝缘 Fully insulated		
门联锁操作机构(带黑色旋钮和灰色显示面板) Rotary drive, complete black knob, grey indicator plate	3VF9 123 - 1EA00	0.8
门联锁操作机构(作为急停开关，带红色旋钮和黄色显示面板) Rotary drive, complete, EMERGENCY STOP version, red knob, yellow indicator plate	3VF9 123 - 1FA00	0.8

3VU, 3VF1 技术数据			Technical data		
标准 Standards			DIN VDE0660;IE947-1; IEC947-2;IEC947-4-1		
型号 Type			3VU13	3VU16	3VF1
极数 Number of poles			3	3	3
最大额定电流	Max. rated current I_n				
	• 线路保护 Plant protection	A	25	63	63
	• 电机保护 motor protection	A	25	52	63
	• 起动器组合用 starter combinations	A	-	52	80
容许环境温度	Permissible ambient temperature				
	• 额定电流 at full rated current	ºC	-20 to+55		
	• 库存时 in storage	ºC	-50 to+80		
额定工作电压	Rated operational voltage U_e	V	690		690
额定频率	Rated frequency	Hz	50/60		50/60
额定绝缘电压	Rated insulation voltage U_i	V	750		750
额定冲击耐受电压	Rated impulse withstand voltage U_{imp}	kV	6		8
使用类别 Utilization category					
	• 根据 IEC947-2 (断路器) to IEC947-2 (circuit-breakers)		A		A
	• 根据 IEC947-4-1 (电动机起动器) to IEC947-4-1 (motor starters)		AC-3		AC-3
机械寿命 Mechanical endurance		操作循环次数 Operating cycles			
	• 小于 25A up to 25A		100,000	100,000	30,000
	• 大于 25A 25A upwards			30,000	30,000
带负荷时每小时操作次数	Number of operating cycles/h (on load)	1/h	25	25	25
防护等级 Degree of protectoin					
不接线状态 / 接线状态 with open terminals/with conductors connected			IP 00/IP 20		
温度补偿 Temperature compensation		to IEC947-4-1	有 Yes		
断相保护 Phase failure sensitivity		to IEC947-4-1	有 Yes		无 No
限流器 Limiter for 3VU13					
与 3VU13 串联时的额定短路分断能力 Rated short-circuit breaking capacity when connected in series with 3VU13					
	• 低于 AC415V 时 up to AC 415V	kA	50	-	-
	• 其它电压时 for other voltages		见 15 页		
额定操作电压 Rated operational voltage U_e		V	500	-	-
额定频率 Rated frequency		Hz	50/60		
最大额定电流 Max. rated current I_n					
	• 单体安装 standing alone 低于 55ºC up to 55ºC	A	56		
	• 相邻安装 adjacent 低于 55ºC up to 55ºC	A	50		
机械寿命 Mechanical endurance		操作循环次数 Operating cycles	100,000		

3VU, 3VF1 技术数据 Technical data

型号 Type		3VU13		3VU16	3VF1		
辅助触头 Auxiliary contact							
额定工作电压 Rated operational voltage U_e	AC V	230	400	500	230	400	500
额定工作电流 Rated operational current I_e	A	3	1.5	1	3	3	1.5
使用类别 Utilization category		AC-15			AC-15		
额定工作电压 Rated operational *voltage* U_e DC L/R200 ms	DC V	24	60	220	24	110	220
额定工作电流 Rated operational current I_e	A	2.3	0.7	0.3	3	0.7	0.55
使用类别 Utilization category			DC-13			DC-13	
欠压脱扣器 Undervoltage releases							
功率损耗 Power consumption							
• 闭合过程 during pickup	VA/W	10/6			16/14		
• 持续工作状态 in continuous operation	VA/W	4.7/2			4.5/2.8		
脱扣电压 Tripping Voltage							
• 脱扣 tripping	V	0.7 to 0.35 × U_s			0.7 to 0.35 × U_s		
• 闭合 pick up	V	0.85 to 1.1 × U_s			0.85 to 1.1 × U_s		
最大断开时间 Max. opening time	ms	20			20		
分励脱扣器 Shunt trips							
闭合过程功率损耗 Power consumption during pickup	VAW	10/6			65/57		
最大允许操作持续时间 Max. permissible command duration	s	-			5		
脱扣电压 Tripping voltage	V	0.7 to 1.1 × U_s			0.7 to 1.1 × U_s		
最大断开时间 Max. opening time	ms	20			20		
远程控制机构 Remote-controlled mechanism for 3VU13							
额定控制电源电压 Rated control supply voltage U_s	ACV	220/240					
功率损耗 Power consumption							
• 闭合过程 during pick up	W	230					
• 持续工作状态 in continuous operation	W	5					
脱扣电压 Tripping Voltage	V	0.85 to 1.1 × U_s					
额定控制电源电压 U_s 下最小持续操作时间 Minimum command duration at U_s	s	0.25					
最大持续操作时间 Max.command duration	s	5					
闭合／断开时间 Total ON/OFF time	s	0.25/0.04					
主电路导线截面 Cross-section for main conductors							
单股线或多股线 Soild or stranded	mm^2	2 ×(1 to 6)		1 × 15 to 2 × 16 or 1 × 25+1 × 10	2.5 to 35		
带端子的细多股线 Finely stranded with end sleeve	mm^2	2 ×(1 to 4)		1 × 15 to 2 × 10 or 1 × 16+1 × 10	1.5 to 25		
辅助电路导线截面 Cross-sections for auxiliary and control connecting leads							
单股线或多股线 Soild or stranded	mm^2	1 × 0.5 to 2 × 2.5			1 × 0.75 to 2 × 2.5		
带端子的细多股线 Finely stranded with end sleeve	mm^2	1 × 0.5 to 2 × 1.5			1 × 0.5 to 2 × 1.5		

3VU, 3VF1 技术数据 Technical data

额定短路分断能力

下表显示在额定电流 I_n 和额定工作电压 U_e 下的额定极限短路分断能力 I_{cu} 和额定运行短路分断能力 I_{cs}。

在彩色区域，额定极限短路分断能力不小于 100kA 因此不需要后备熔断器。

在其它区域，当断路器安装点的短路电流超过表中列出的断路器的额定短路分断能力时，断路器需要熔断器保护，后备熔断器按表中所列选用。

对于 3VU13 断路器，如不需要熔断器作后备保护，可用 3VU9 138-2AB00 限流器代替熔断器，以增加断路器的短路分断能力，具体数值在括号内。

Rated short-circuit breaking capacity

The table shows the rated ultimate short-circuit breaking capacity Icu and the rated service short-circuit breaking capacity Ics for the 3VU and 3VF1 circuit-breakers with respect to rated current In and rated operational voltage U_e.

Infeed is permitted at top or bottom without reduction of rated data. In the short-circuit-proof areas, Icu is at least 100 kA. A backup fuse is therefore not necessary.

In the other areas, when the short-circuit current at the installation point exceeds the rated short-circuit breaking capacity given in the table for the circuit-breaker, the breaker must be protected by a backup fuse. See the following table for the maximum rated current for the backup fuse. With a backup fuse according to the table, the maximum short-circuit current is permitted to equal the rated breaking capacity of the backup fuse.

Fuseless construction

In fuseless construction, for the 3VU13 circuit-breaker, the limiter 3VU9 138-2AB00 is connected to the input instead of a backup fuse. This increases the short-circuit breaking capacity at AC 415 V to 50 kA. For other voltages, the values are given in brackets.

断路器	额定电流 I_n	低于 AC240V Up to AC240V			低于 AC415V Up to AC415V			低于 AC440V Up to AC440V			低于 AC500V Up to AC500V			低于 AC690V Up to AC690V		
Circuit-breakers	Rated current I_n	I_{cu}	I_{cs}	最大后备熔断器 Max Back up fuse (gL/gG)	I_{cu}	I_{cs}	最大后备熔断器 Max Back up fuse (gL/gG)	I_{cu}	I_{cs}	最大后备熔断器 Max Back up fuse (gL/gG)	I_{cu}	I_{cs}	最大后备熔断器 Max Back up fuse (gL/gG)	I_{cu}	I_{cs}	最大后备熔断器 Max Back up fuse (gL/gG)
Type	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
3VU13	Up to 1A	短路电流低于 100 kA，不需要后备熔断器														
	1.6A	Short-circuit proof up to 100kA,												2	2	20
	2.4A	backup fuse is not necessary									10(50)	10(50)	35	2	2	35
	3.2 and 4A							10(50)	10(50)	50	3(50)	3(50)	50	2	2	50
	5 and 6A							5(50)	5(50)	63	3(50)	3(50)	63	2	2	63
	8 and 10A				10(50)	10(50)	80	5(50)	5(50)	80	3(5)	3(5)	80	2	2	80
	13 and 16A				6(50)	6(50)	80	5(30)	5(30)	80	3(5)	3(5)	80	2	2	80
	20 and 25A	10(50)	10(50)	100	6(50)	6(50)	80	5(30)	5(30)	80	3(5)	3(5)	80	2	2	80
3VU16	Up to 2.4A	短路电流低于 100 kA，不需要后备熔断器														
	4A	Short-circuit proof up to 100kA,												4	4	80
	6A	backup fuse is not necessary										50		4	4	100
	10A								50		10	5	160	4	4	125
	16A							25	13	200	10	5	160	4	4	125
	25A					50		25	13	200	10	5	200	4	4	160
	32 to 63A				35	17	200	25	13	200	10	5	200	4	4	160
3VF1	10A	短路电流低于 100 kA，不需要后备熔断器														
	16A	Short-circuit proof up to 100kA,												22	22	160
	25A	backup fuse is not necessary						42	42	160	30	30	160	18	18	160
	32A							30	30	160	22	22	160	15	15	160
	40A				42	42	160	26	26	160	18	18	160	12	12	160
	50A				30	30	160	22	22	160	15	15	160	10	10	160
	63A				22	22	160	18	18	160	10	10	160	7.5	7.5	160

注 :( )括号内数字为带限流器的 3VU13 断路器的短路分断能力

( ) Value in brackets: short-circuit breaking capacity for 3VU13 with limiter

3VU, 3VF1 技术数据 Technical data

相应功率因数下短路分断能力与最小短路接通能力关系表
Relation between short-circuit breaking capacity I, related power factor and minimum short-circuit making capacity to IEC 947-2

短路分断能力 Short-circuit breaking capacity I A	功率因数 Power factor cos φ	短路接通能力 Short-circuit making capacity
$I \leq$ 3 000	0.9	1.42 × I
3 000 < $I \leq$ 4 500	0.8	1.47 × I
4 500 < $I \leq$ 6 000	0.7	1.5 × I
6 000 < $I \leq$ 10 000	0.5	1.7 × I
10 000 < $I \leq$ 20 000	0.3	2.0 × I
20 000 < $I \leq$ 50 000	0.25	2.1 × I
50 000 < I	0.2	2.2 × I

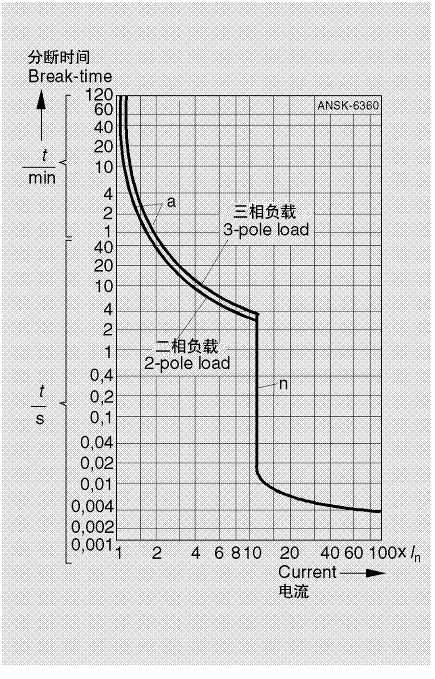
3VU, 3VF1 特性曲线 Characteristic curves

特性曲线是在冷态，三相负载下测得。
The characteristic curves are obtained in the cold state and 3-pole loading.
特性曲线在工作温度下热过载脱扣器脱扣时间减少约 25%。
At operating temperature, the tripping time of the thermal releases drops by about 25%.
根据 DIN VDE 0165 标准，在 3 相负载和 3 倍及以上整定电流下脱扣时间的偏差为± 20%
With 3-pole loading, the deviation in tripping time for 3 times the current and upwards is ± 20% in accordance with DIN VDE 0165.

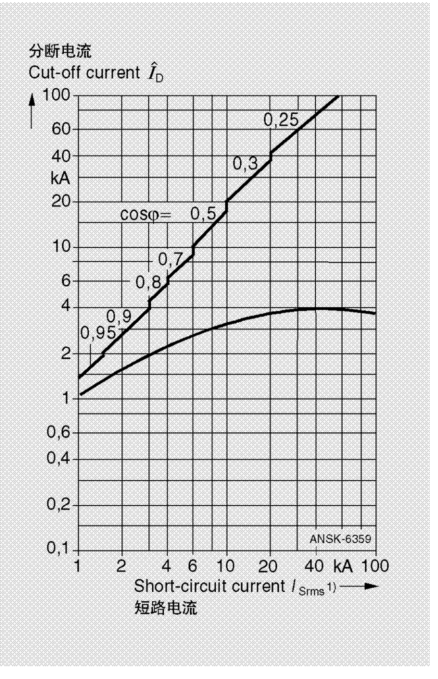
3VU13 特性曲线 Characteristic curves for 3VU13

特性曲线显示 3VU1340-0MK00 断路器额定电流 6A，电流整定范围 4-6A 瞬时过电流脱扣器脱扣电流为 72A，额定电压为交流 50Hz, 400V 时测出。

The characteristic curves shown here apply for a 3VU1340-0MK00 circuit-breaker with a rated current of 6A, a current setting range of 4 to 6A and a tripping current for the instantaneous overcurrent release of 72A, at a rated voltage of AC 50 Hz, 400V.

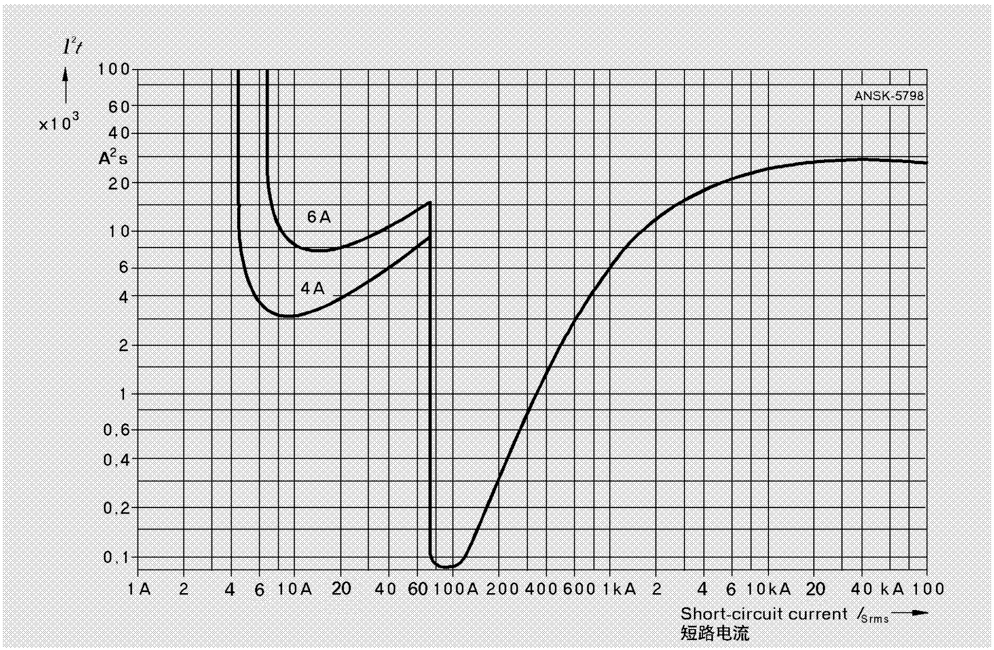


3VU13 时间 / 电流特性曲线
Schematic representation of the time/ current characteristic for 3VU13



3VU1340-0MK00 限流特性
Current limiting characteristic for 3VU1340-0MK00

3VU13 特性曲线 Characteristic curves for 3VU13

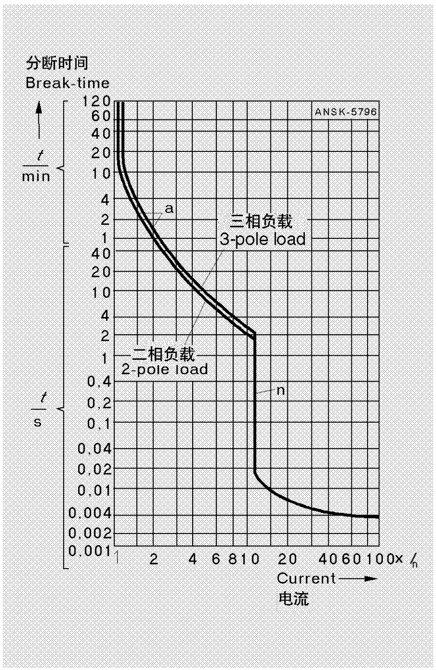


3VU1340-0MK00 I^2t 特性
I^2t characteristic for 3VU13 40-0MK00

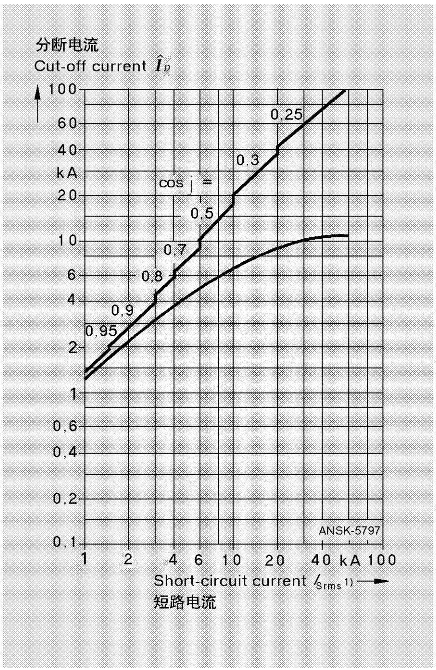
3VU16 特性曲线 Characteristic curves for 3VU16

特性曲线为3VU16 40-0MN00断路器额定电流25A，整定电流范围16-25A，瞬时过电流脱扣电流为300A,额定电压交流50Hz, 400V时测出。

The characteristic curves shown here apply for a 3VU16 40-0MN00 circuit-breaker with a rated current of 25A and a tripping current for the instantaneous overcurrent release of 300A, at a rated voltage of AC 50Hz, 400V.

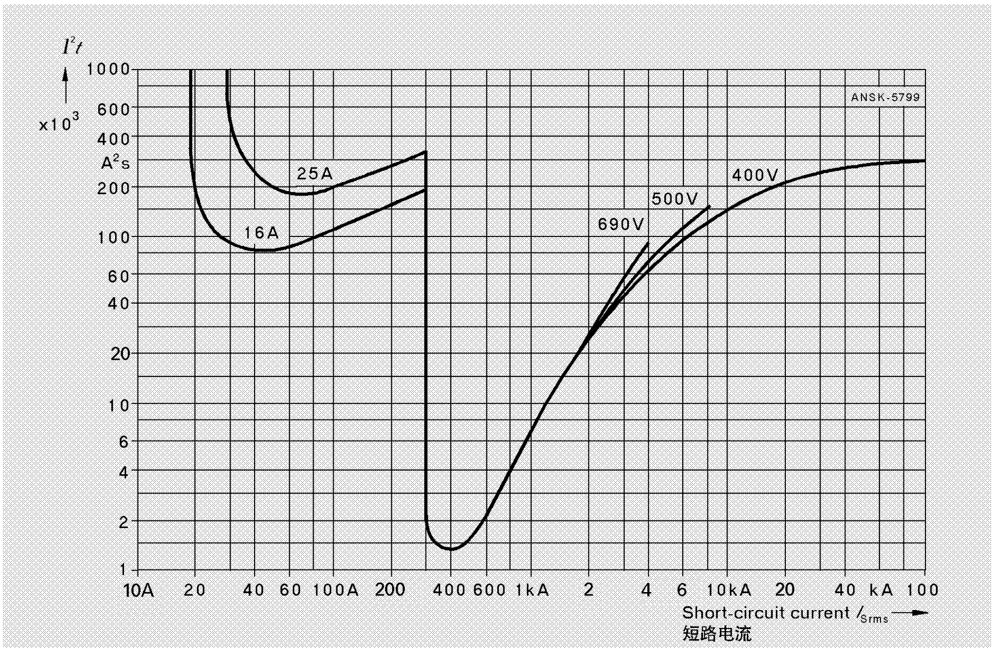


3VU16 时间一电流特性曲线
Schematic representation of the time/
current characteristic for 3VU16



3VU16 40-0MN00 限流特性
Current limiting characteristic for
3VU16 40-0MN00

3VU16 特性曲线 | Characteristic curves for 3VU16

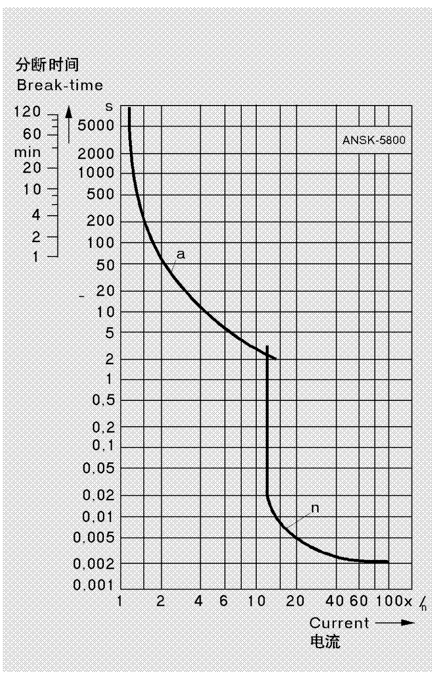


3VU1640-0MN00 I^2t 特性
I^2t characteristic for 3VU 16 40-0MN00

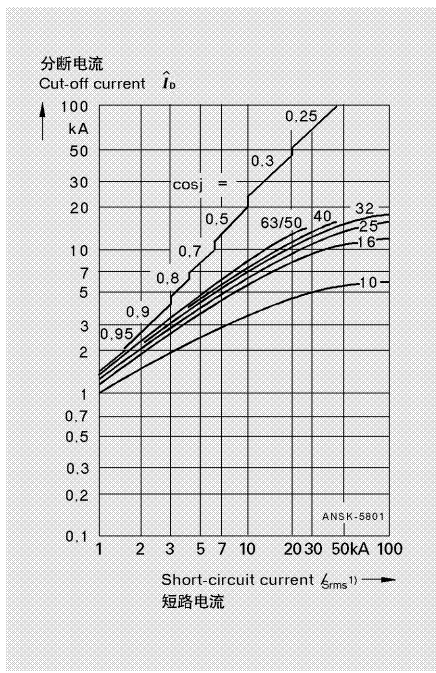
3VF1 特性曲线 | Characteristic curves for 3VF1

特性曲线为3VF1断路器在额定电流63A，整定电流范围45-63A，瞬时脱扣电流760A额定电压交流50Hz, 400V时测出。

The characteristic curves shown here apply for a 3VF1431-1DK11 circuit-breaker with a rated current of 63A and a tripping current for the instantaneous overcurrent release of 760A, at a rated voltage of AC 50Hz, 400V.

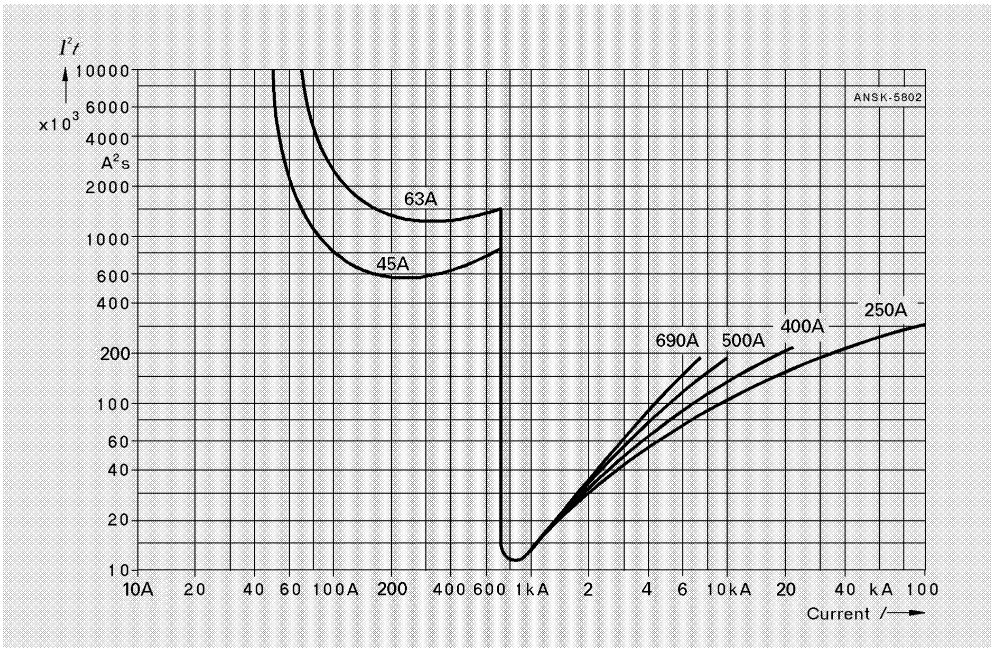


3VF1 时间一电流特性曲线
Schematic representation of the time/ current characteristic for 3VF1



3VF1 限流特性
Current limiting characteristic for 3VF1

3VF1 特性曲线 Characteristic curves for 3VF1



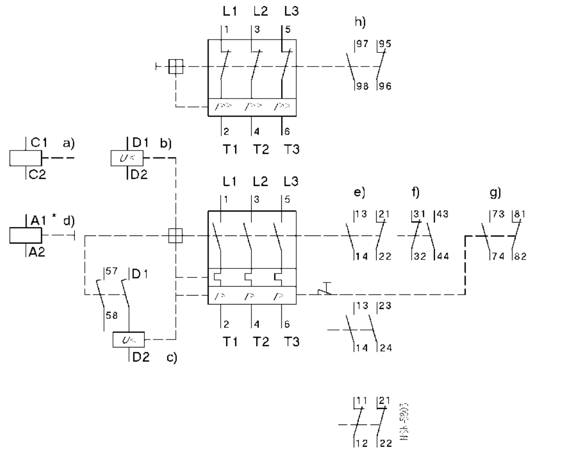
3VF1 231-1DK11 I^2t 特性
I^2t characteristic for 3VF1 231-1DK11

3VU, 3VF1 电路图 Circuit diagrams

此电路图提供各附件类型连接和使用的信息，帮助了解各附件的功能，并不显示附件结构。

As defined by DIN 40 713, the graphical symbols in the equipment circuit diagrams only provide information about the type, connection and operation of the devices, but not about their construction.

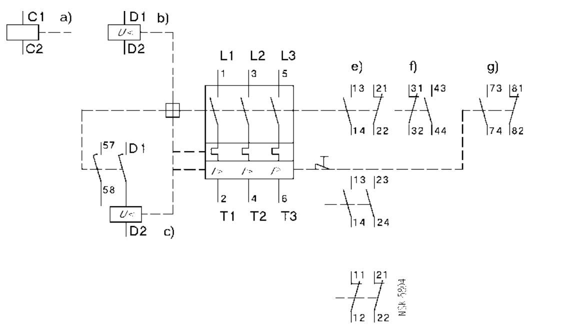
设备电路图 Equipment circuit diagrams



∗可选件
a) 分励脱扣器
b) 欠压脱扣器
c) 带超前动作辅助触头的欠压脱扣器
d) 远程控制机构
e) 内部辅助触头
f) 外加辅助触头
g) 短路故障指示器
h) 限流器内部辅助触头

∗ optionally attached
a) Shunt trip
b) Undervoltage release
c) Undervoltage release with leading auxiliary contacts.
d) Remote-controlled operating mechanism
e) Mounted auxiliary contacts
f) Additional auxiliary contacts
g) Short-circuit signalling contacts
h) Auxiliary contacts mounted in the limiter

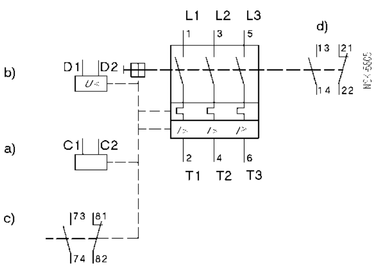
3VU13 断路器和 3VU9 限流器
3VU13 circuit-breaker and 3VU9 limiter



∗可选件
a) 分励脱扣器
b) 欠压脱扣器
c) 带超前辅助触头的欠压脱扣器
e) 内部辅助触头
f) 外加辅助触头
g) 短路故障指示器

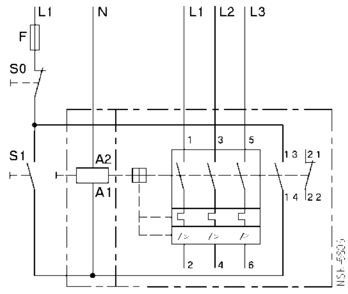
∗ optionally attached
a) Shunt trip
b) Undervoltage release
c) Undervoltage release with leading auxiliary contacts.
e) Mounted auxiliary contacts
f) Additional auxiliary contacts
g) Short-circuit signalling contacts

3VU16 断路器
3VU16 circuit-breaker



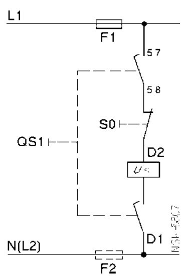
a)分励脱扣器　a) Shunt trip
b)欠压脱扣器　b) Undervoltage release
c)信号触头　c) Signalling contacts
d)辅助触头　d) Auxiliary contacts

3VF1 断路器
3VF1 circuit-breaker



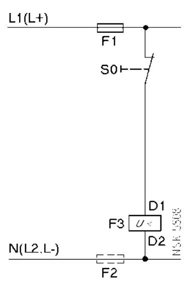
S0 断开
S1 断路器辅助触头
S0 OFF
S1 Leading auxiliary contact

3VU13 断路器带远程控制机构
AC 50/60Hz 220 to 240V 远程接通时间＜ 5s (不允许不间断操作)
3VU13 circuit-breakers
with remote-controlled operating mechanism
AC 50/60Hz, 220 to 240V, momentary-contact conmmand 5s (continuous command not permissible)

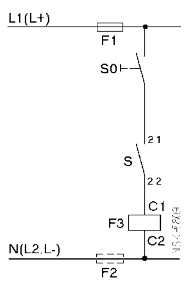


QS1 断路器上的操作手柄
S0 控制电路的断开按钮
QS1 Toggle handle on circuit-breaker
S0 OFF button in control circuit

带 2 个超前动作辅助触头的欠压脱扣器，用于 3VU13 和 3VU16 断路器
for 3VU13/3VU16 circuit-breakers, with 2 leading auxiliary contacts



欠压脱扣器 Undervoltage release



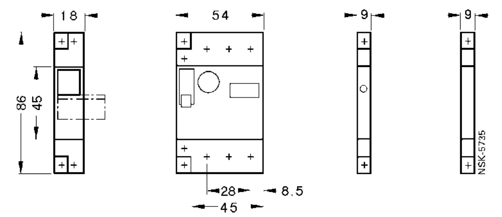
分励脱扣器 Shunt trip

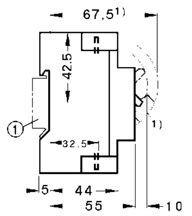
S0 断开
S 断路器辅助触头
S0 OFF
S Auxiliary contact of the circuit-breaker

辅助脱扣器用于 3VU13、3VU16、3VF1
Auxiliary release for 3VU13, 3VU16, 3VF1.

3VU, 3VF1 外形及安装尺寸 | Dimension drawings for 3VU, 3VF1

(1TE) (3TE) (0.5TE) (0.5TE)





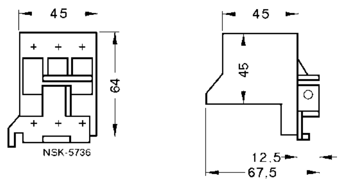
3VU13 断路器能与下列组合
a)欠压脱扣器或分励脱扣器和／或
b)短路故障指示器和／或
c)辅助触头

3VU13 ciruit-breakers can be combined with
a) undervoltage release or shunt trip and/or
b) short-circuit signalling switch and/or
c) auxiliary contacts

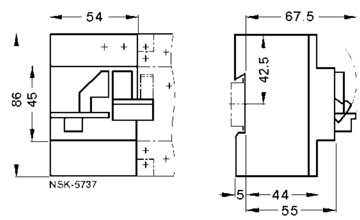
3VU9 138-2AB00 限流器
限流器与 3VU13 断路器尺寸相同。

3VU9 138-2AB00 limiter
The limiter has the same dimensions as the standard version of the 3VU13 circuit-breaker

① 35mm 标准卡轨符合 EN 50 022 标准
① 35mm standard mounting rail acc.to EN 50 022

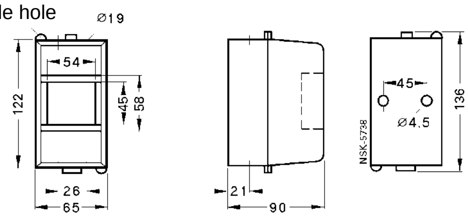


3VU9 138-3AA00 绝缘块
3VU9 138-3AA00 isolating module



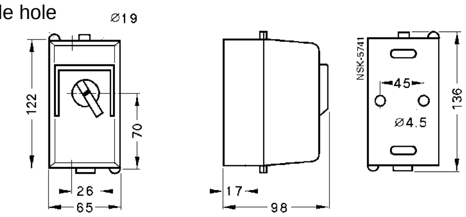
3VU9 138-1AA14 远距离操作机构
3VU9 138-1AA14 remote-controlled operating mechanism

密封孔
Sealable hole



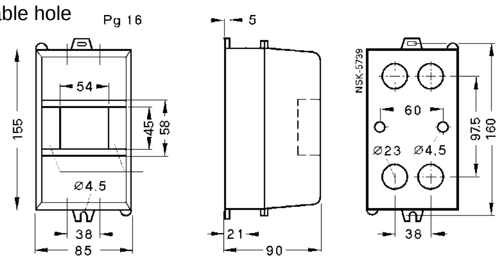
3VU9 133-0AA00 防护罩
3VU9 133-0AA00 moulded-plastic housing

密封孔
Sealable hole



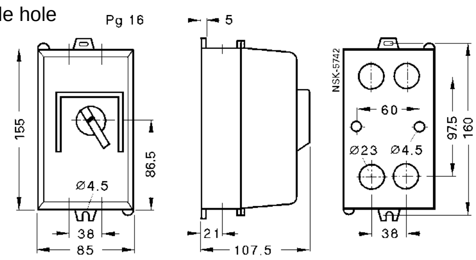
3VU9 133-2CA00 防护罩
3VU9 133-2CA00 moulded-plastic housing

密封孔
Sealable hole



3VU9 133-0BA00 防护罩
3VU9 133-OBA00 moulded-plastic housing

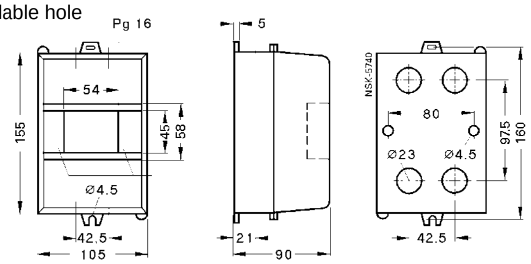
密封孔
Sealable hole



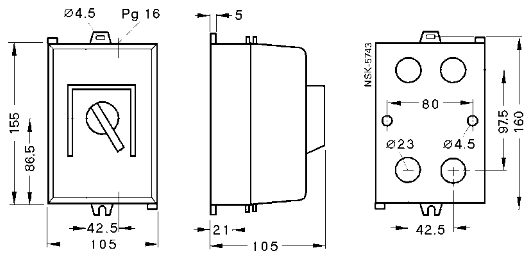
3VU9 133-2EA00 防护罩
3VU9 133-2EA00 moulded-plastic housing

3VU, 3VF1 外形及安装尺寸 — Dimension drawings for 3VU, 3VF1

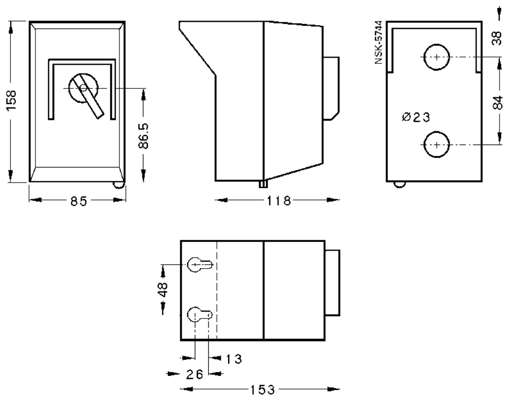
密封孔
Sealable hole



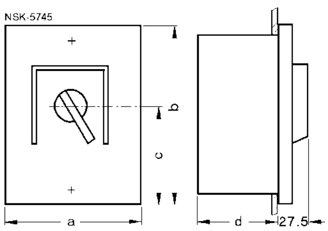
3VU9 133-0CA00 防护罩
3VU9 133-0CA00 moulded-plastic housing



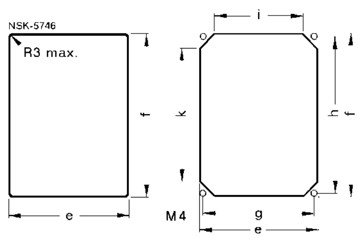
3VU9 133-2GA00 防护罩
3VU9 133-2GA00 moulded-plastic housing



3VU9 133-2LA00 安于台面下的防护罩
3VU9 133-2LA00 housing for under-table mounting

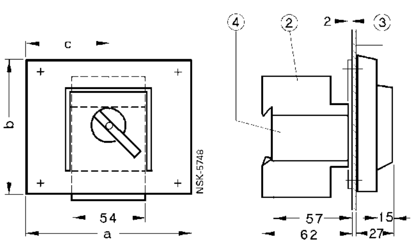


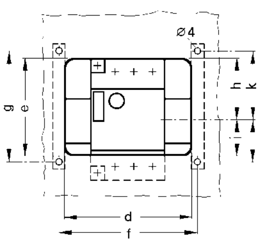
嵌装防护罩
3VU9 133-2QA00, 3VU9 133-2SA00, 3VU9 133-2UA00, moulded-plastic housing for flush mouning



防护罩开孔尺寸
Panel cutout for moulded-plastic housing

Type	TE	a	b	c	d	e	f	g	h	i	k
3VU9 133-2QA00	3	82	130	74	70	70	113	65	111	45	99
3VU9 133-2SA00	4	100	130	74	77.5	87	113	83	111	67	93
3VU9 133-2UA00	5	115	150	84	77.5	100	135	95	130	80	115





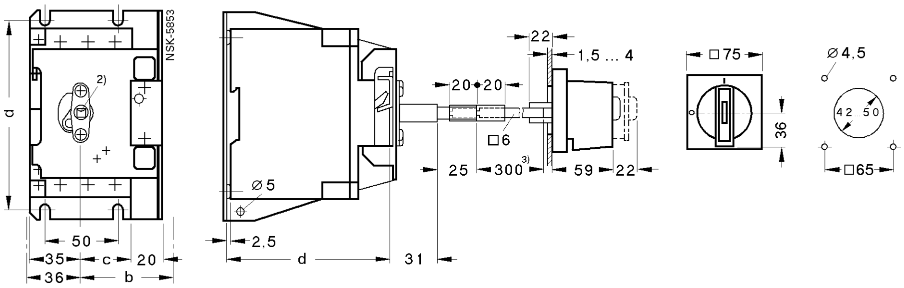
② 3VU13 断路器
② 3VU13 circuit-breaker
③柜门
③ Cubicle door
④支撑件
④ Holder

3VU13 断路器带支撑架
正面板带旋转操作机构
3VU9 133-2JB00, 3VU9 133-2LB00, 3VU9 133-2NB00,
front plates with rotary operating mechanism, with holder for 3VU13 circuit-breaker

开孔尺寸
Panel cutout

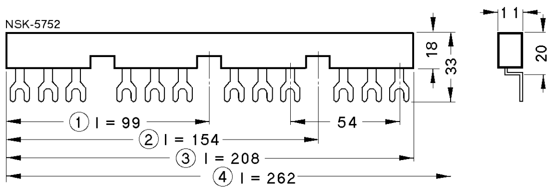
Type	TE	a	b	c	d	e	f	g	h	i	k	l
3VU9 133-2JB00	3	72	90	36	52	75	60	60	53	22	40	20
3VU9 133-2LB00	4	92	90	56	72	75	80	60	53	22	40	20
3VU9 133-2NB00	5	116	100	58	90	78	100	80	53	25	51	29

3VU, 3VF1 外形及安装尺寸 Dimension drawings for 3VU, 3VF1



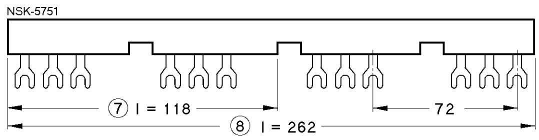
Type	a	b	c	d
3VU13	100	45	19	75
3VU16	130	63	45	112

用于 3VU13 和 3VU16 的门联锁旋转操作机构
3VU9 1.3-1PA0. door-coupling
rotary operating mechanism
for 3VU13 and 3 VU16



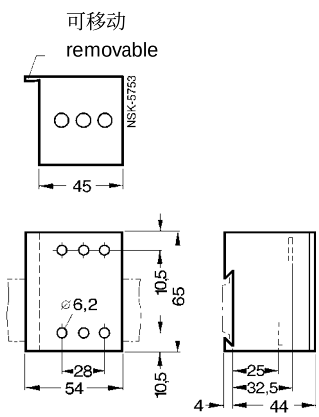
3VU9 135-1AB02, 3VU9 135-2AB03,
3VU9 135-1AB04, 3VU9 135-1AB05
三相母线排 three-phase busbar

① For 2 devices: 3VU9 135-1AB02	用于 2 台断路器
② For 3 devices: 3VU9 135-1AB03	用于 3 台断路器
③ For 4 devices: 3VU9 135-1AB04	用于 4 台断路器
④ For 5 devices: 3VU9 135-1AB05	用于 5 台断路器

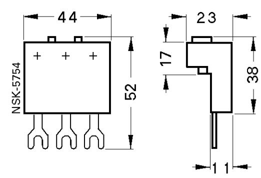


用于带辅助触头或脱扣器的三相母线排
⑦用于 2 台带辅助触头或辅助脱扣器的断路器。
⑧用于 4 台带辅助触头或辅助脱扣器的断路器。

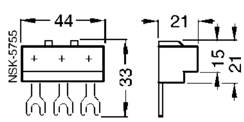
3VU9 135-1KA02,3VU9 135-1KA04
three-phase busbar with auxiliary switch or auxiliary release
⑦ For 2 circuit-breakers with auxiliary switch or auxiliary release: 3VU9 135-1KA02
⑧ For 4 circuit-breakers with auxiliary switch or auxiliary release:3VU9 135-1KA04



三相进线端子
3VU9 135-1BB03
three-phase feed-in terminal

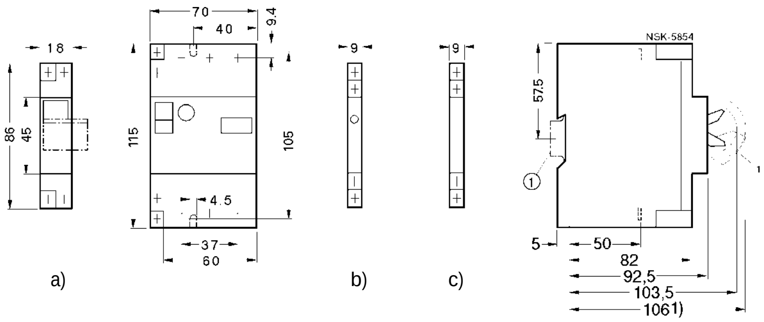


三相进线端子类型 I
3VU9 135-1BB00
three-phase feed-in terminal, type I



三相进线端子类型 II
3VU9 135-1BB01
three-phase feed-in terminal, type II

3VU, 3VF1 外形及安装尺寸 — Dimension drawings for 3VU, 3VF1

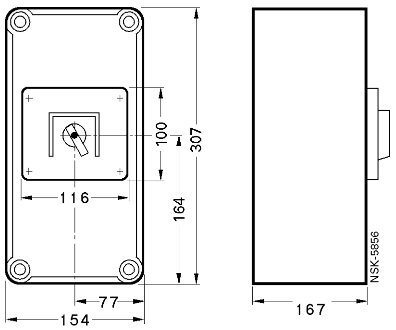


3VU16 断路器能与下列组合
a)欠压脱扣器或分励脱扣器和／或
b)短路故障指示器和／或
c)辅助触头

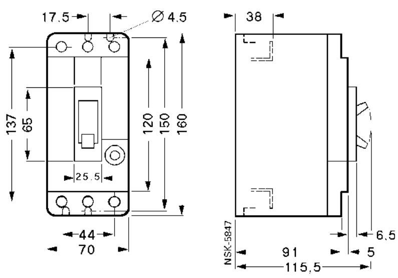
3VU16 circuit-breakers can be combined with
a) undervoltage release or shunt trip and/or
b) short-circuit signalling switch and/or
c) auxiliary contacts

① 35mm 标准卡轨符合 EN 50 022 标准

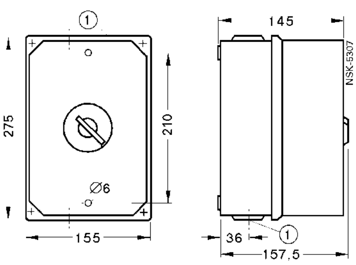
① 35mm standard mounting rail acc. to EN 50 022



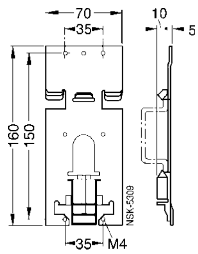
防护罩
8HP2 771 moulded-plastic housing



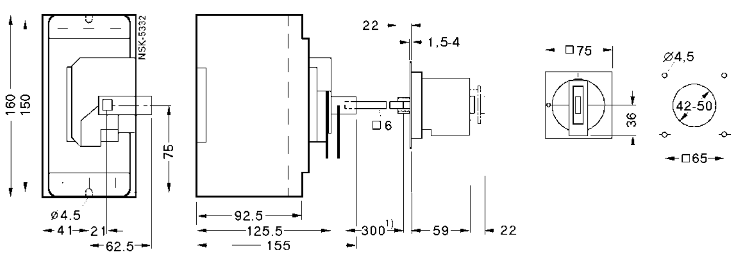
3VF1



用于 3VF1 的防护罩
3VE9 423 sheet-steel housing for 3VF1
①采用 Pg 29 螺纹敲落孔
① Knockout for cable entry for Pg 29 steel-conduit thread.



3VE9 427-7AA01 适配器
用于 EN 50 023-75 75 × 25 标准卡轨
3VE9 427-7AA01adapter
for EN50 023-75 75 × 25 standard mounting rail



用于 3VF1 整套的门联锁操作机构
3VU9 123-1. A00 complete rotary drive with door coupling for 3VF1

3VU, 3VF1 灭弧室上方要求空间 — Space required above arc chutes for 3VU, 3VF1 circuit-breakers

额定电压下，至相邻零件以及非绝缘带电体的最小距离。

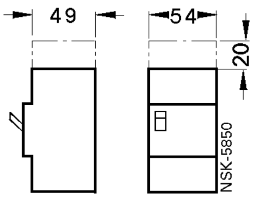
Minimum clearance with rated voltage to adjacent parts as well as non-insulated live parts.

大面积表面和电弧开口处之间距 3VU13 至少保持 1cm, 3VU16 3VF1 至少保持 2cm。

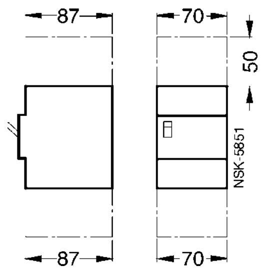
The spacing of minimum 1cm with 3VU13 and minimum 2 cm with 3VU16 and 3VF1 between large-surface covers and arc openings should be observed.

位于飞弧距离之内的导电部件必须绝缘。

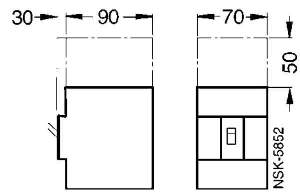
Uninsulated conductors must be insulated within the space required above arc chutes.



3VU13



3VU16

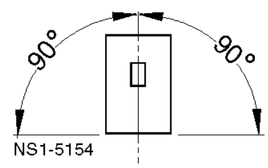


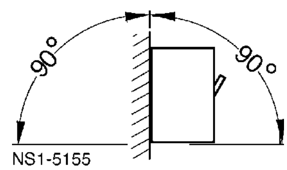
3VF1

3VU, 3VF1 允许安装方式 — 3VU, 3VF1 Permissible mounting position

3VU13, 3VU16断路器安装方式可根据用户操作位置安装。
3VU13, 3VU16 Circuit-breakers permissible mounting position due to position of the operating parts, note DIN43 602.

3VF1 断路器安装方式如图
3VF1Circuit-breakers permissible mounting position.



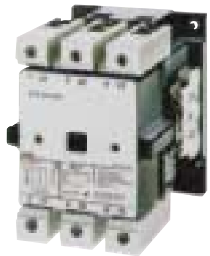


用于三相电动机的接触器和接触器组合 Contactors and Contactor Combinations for switching three-phase motors



4 to 18.5kW — 页号 Page

3TF3 接触器 可插装辅助触头座 / 3TF3 contactors with pluggable aux. contact blocks



4 to 200kW — 页号 Page

3TF40 至 3TF56 接触器 / 3TF40 to 3TF56 contactors



4 to 15kW — 页号 Page

3TB40 至 3TB44 接触器 / 3TB40 to 3TB44 contactors



4 to 200kW — 页号 Page

3TD 机械联锁 可逆接触器 / 3TD reversing contactor combinations



2.2 to 4kW

3TF2 SIMICONT 三极接触器 / 3TF2 three-pole SIMICONT contactor

可插装辅助触头座
Pluggable contact block
交流，直流操作
AC, DC operation

详情请向就近西门子办事处查询
For details, please inquire to Siemens Representatives



250 to 450kW

3TF57 接触器 3TF68, 3TF69 真空接触器 / 3TF57 contactor 3TF68, 3TF69 vacuum contactor

交流，直流操作
AC, DC operation

详情请向就近西门子办事处查询
For details, please inquire to Siemens Representatives

特殊用途接触器 Contactors for special applications



25 to 1000A

3TK 四极接触器 通断阻性负载(AC-1)	3TK 4-pole contactors for switching resistive loads (AC-1)

交流操作
AC operation
4NO 主触头 25~1000A
4NO main contacts
2NO+2NC 主触头 25~110A
2NO+2NC main contacts

详情请向就近西门子办事处查询
For details, please inquire to Siemens Representatives



32 to 400A

3TC 直流负载 接触器 单极与两极	3TC contactors for switching DC voltages 1-and 2-pole

交流，直流操作
AC, DC operation

详情请向就近西门子办事处查询
For details, please inquire to Siemens Representatives

说明 Description

3TF系列交流接触器是西门子公司九十年代最新产品。本系列产品为交流50Hz或60Hz，额定绝缘电压为690-1000V，在AC-3使用类别下额定工作电压为380V时的额定工作电流为9A-400A。主要供远距离接通及分断电路之用, 适用于控制交流电动机的起动、停止及反转。符合IEC947, VDE0660, GB14048等标准。

3TF Series AC Contactors are latest products of Siemens AG in 1990' s. The series products are suitable for frequency of 50/60Hz, rated insulation voltage up to 690 ~ 1000V, rated operational current up to 9A ~ 400A at rated operational voltage up to 380V under the utilization category AC - 3. 3TF Series AC Contactors are mainly used for making/ breaking electric circuits at a long distance and for frequent starting/ stopping and reversing control of AC motors.They comply with IEC947, VDE0660, GB14048.

工作条件 Operating Conditions

- 海拔高度不超过2000米；
- 周围环境温度：-25 ~ +55ºC
- 空气相对湿度：在+40ºC时不超过50%， +25ºC时不超过90%;
- 大气条件：没有会引起爆炸危险的介质，也没有腐蚀金属和破坏绝缘的气体和导电尘埃；
- 在无显著摇动和冲击振动的地方；
- 在没有雨雪侵袭的地方。

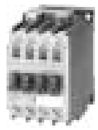
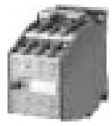
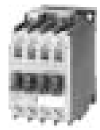
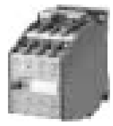
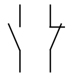
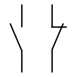
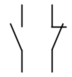
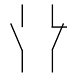
- The altitude of the site of installation does not exceed 2000 meters above sea levels.
- The ambient air temperature: -25 ~ +55ºC
- Relative humidity does not exceed 50% at +40ºC and 90% at +25ºC
- Atmospheric conditions: the air does not contain any explosive medium, corrosive gases and conductive dust.
- Never be shocked and vibrated obviously.
- Never be wetted by rain and snow.

结构特点 Features

- 安全性能好，导电部件不外露；
- 体积小，重量轻，灭弧罩材料采用不饱和树脂，耐弧性好，不会碎裂；
- 灭弧室呈封闭型，飞弧距离小，可缩小电气箱体尺寸；
- 主触头系统结构独特，触头磨损小，电寿命增加；
- 电磁铁工作可靠，损耗少，噪音小，且具很高的机械强度；
- 操作频率和控制容量高；
- 3TF30-35系列可外加辅助触头座；
- SIGUT-西门子专利端接法，接线方便，牢固，接触可靠性高，抗振性强，安全防护性好。

- For better safety, conductive part are enclosed.
- Small sizes, light weight, material of arc chute adopts unsaturated resin, with good arc resistance, never splitting.
- The arc chute is enclosed , arc-over distance is small, with a compact electric cabinet.
- Construction of main contacts system is unique, abrasion of the contacts is small, with a long electric endurance.
- The operation of the magnet has many advantages such as good reliability, little consumption, low noise and high mechanical strength.
- The contactors have higher operation frequency and control capacity.
- Auxiliary contact block may be attached to 3TF30 ~ 50 Series AC Contactors.
- SIGUT - Siemens patent terminal, ensures easy and reliable connection, strog shock resistance and perfect safety protection.

选型与订货数据 Selection and ordering data

交流操作 AC operation		3TF30	3TF40	3TF31	3TF41
					
辅助触头 Auxiliary contacts NO 常开 NC 常闭		 NO - NC	 NO - NC	 NO - NC	 NO - NC
订货号 Order No.		3TF30 00 - 0X - - 3TF30 10 - 0X 1 - 3TF30 01 - 0X - 1	3TF40 10 - 0X 1 - 3TF40 01 - 0X - 1 3TF40 11 - 0X 1 1 3TF40 22 - 0X 2 2 3TF40 20 - 0X 2 - 3TF40 31 - 0X 3 1	3TF31 00 - 0X - - 3TF31 10 - 0X 1 - 3TF31 01 - 0X - 1	3TF41 10 - 0X 1 - 3TF41 01 - 0X - 1 3TF41 11 - 0X 1 1 3TF41 22 - 0X 2 2 3TF41 20 - 0X 2 - 3TF41 31 - 0X 3 1
额定绝缘电压(V)/Rated insulation voltage		690	690	690	690
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3	9	9	12	12
	AC - 4	3.3	3.3	4.3	4.3
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3 230/220V	2.4	2.4	3.3	3.3
	AC - 3 400/380V	4	4	5.5	5.5
	AC - 3 500 V	5.5	5.5	7.5	7.5
	AC - 3 690/660V	5.5	5.5	7.5	7.5
	AC - 3 1000 V	- -	- -	- -	- -
	AC - 4 400/380V	1.48/1.4	1.48/1.4	2/1.9	2/1.9
	AC - 4 690/660V	2.54/2.4	2.54/2.4	3.45/3.3	3.45/3.3
机械寿命(x10⁶) Mechanical endurance		15	15	15	15
电寿命(x10⁶) Electrical endurance	AC - 3	1.2	1.2	1.2	1.2
	AC - 4	0.2	0.2	0.2	0.2
操作频率(1/h) Switching frequency	AC - 3	1000	1000	1000	1000
	AC - 4	250	250	250	250
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)		(0.8~1.1)U_s			

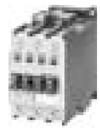
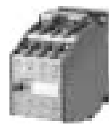
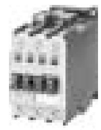
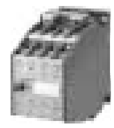
线圈电压订货号
Order No. suffixes for rated control voltages for coils
3TF3···-0X □□
3TF4···-0X □□

50Hz 线圈 / Coils for 50Hz 50Hz	60Hz		60Hz 线圈 / Coils for 60Hz 60Hz	50Hz		50/60Hz 线圈 / Coils for 50/60Hz	
24V	29V	B0	24V	20V	C1	24V	C2
32V	38V	C0	110V	92V	G1	42V	D2
36V	42V	G0	115V	96V	J1	110V	G2
42V	50V	D0	120V	100V	K1	115V	J2
48V	58V	H0	208V	173V	M1	120V	K2
60V	72V	E0	220V	183V	N1	208V	M2
110V	132V	F0	230V	192V	L1	220V	N2
125/127V	150/152V	L0	240V	200V	P1	230V	L2
220V	264V	M0	440V	367V	R1	240V	P2
230V	277V	P0	575V	480V	S1	440V	R2
240V	288V	U0				575V	S2
380V	460V	Q0					
400V	480V	V0					
415V	500V	R0					
500V	600V	S0					

		3TF30	3TF40	3TF31	3TF41
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(VA)/Closed	10	10	10	10
	功率因数 p.f.	0.29	0.29	0.29	0.29
	吸合(VA)/Closing	68	68	68	68
	功率因数 p.f.	0.82	0.82	0.82	0.82
约定发热电流(A) Conventional thermal current		20	20	20	20
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts		10	10	10	10
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts		690	690	690	690
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V	6/10	6/10	6/10	6/10
	DC - 13 110/220V	0.9/0.45	0.9/0.45	0.9/0.45	0.9/0.45
重 量(kg) Weight		0.37	0.43	0.37	0.43

注：用于 3TF3 系列的 3TX4 辅助触头座见第 2/16 页
Note: 3TX4 auxiliary contact blocks for 3TF3 series, see P2/16.

选型与订货数据 Selection and ordering data

交流操作 AC operation		3TF32	3TF42	3TF33	3TF43
					
辅助触头 Auxiliary contacts NO 常开 NC 常闭		NO - NC	NO - NC	NO - NC	NO - NC
订货号 Order No.		3TF32 00 - 0X (- -) 3TF32 11 - 0X (1 1)	3TF42 10 - 0X (1 -) 3TF42 11 - 0X (1 1) 3TF42 20 - 0X (2 -) 3TF42 22 - 0X (2 2)	3TF33 00 - 0X (- -) 3TF33 11 - 0X (1 1)	3TF43 10 - 0X (1 -) 3TF43 11 - 0X (1 1) 3TF43 20 - 0X (2 -) 3TF43 22 - 0X (2 2)
额定绝缘电压(V)/Rated insulation voltage		690	690	690	690
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3	16	16	22	22
	AC - 4	7.7	7.7	8.5	8.5
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3 230/220V	4	4	5.5	5.5
	AC - 3 400/380V	7.5	7.5	11	11
	AC - 3 500 V	9	9	11	11
	AC - 3 690/660V	11	11	11	11
	AC - 3 1000 V	- -	- -	- -	- -
	AC - 4 400/380V	3.5	3.5	4	4
	AC - 4 690/660V	6	6	6.6	6.6
机械寿命($x10^6$) Mechanical endurance		15	15	15	15
电寿命($x10^6$) Electrical endurance	AC - 3	1.2	1.2	1.2	1.2
	AC - 4	0.2	0.2	0.2	0.2
操作频率(1/h) Switching frequency	AC - 3	750	750	750	750
	AC - 4	250	250	250	250
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)		(0.8~1.1)U_s			

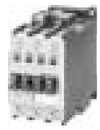
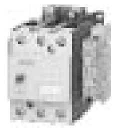
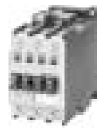
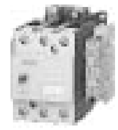
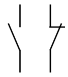
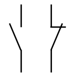
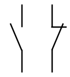
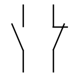
线圈电压订货号
Order No. suffixes for rated control voltages for coils
3TF3···-0X □□
3TF4···-0X □□

50Hz 线圈 /Coils for 50Hz 50Hz	60Hz		60Hz 线圈 /Coils for 60Hz 60Hz	50Hz		50/60Hz 线圈 /Coils for 50/60Hz	
24V	29V	B0	24V	20V	C1	24V	C2
32V	38V	C0	110V	92V	G1	42V	D2
36V	42V	G0	115V	96V	J1	110V	G2
42V	50V	D0	120V	100V	K1	115V	J2
48V	58V	H0	208V	173V	M1	120V	K2
60V	72V	E0	220V	183V	N1	208V	M2
110V	132V	F0	230V	192V	L1	220V	N2
125/127V	150/152V	L0	240V	200V	P1	230V	L2
220V	264V	M0	440V	367V	R1	240V	P2
230V	277V	P0	575V	480V	S1	440V	R2
240V	288V	U0				575V	S2
380V	460V	Q0					
400V	480V	V0					
415V	500V	R0					
500V	600V	S0					

		3TF32	3TF42	3TF33	3TF43
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(VA)/Closed	10	10	10	10
	功率因数 p.f.	0.29	0.29	0.29	0.29
	吸合(VA)/Closing	68	68	68	68
	功率因数 p.f.	0.82	0.82	0.82	0.82
约定发热电流(A) Conventional thermal current		30	30	30	30
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts		10	10	10	10
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts		690	690	690	690
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V	4/6	6/10	4/6	6/10
	DC - 13 110/220V	1.14/0.48	0.9/0.45	1.14/0.48	0.9/0.45
重　量(kg) Weight		0.45	0.49	0.45	0.49

注：用于 3TF3 系列的 3TX4 辅助触头座见第 2/16 页
Note: 3TX4 auxiliary contact blocks for 3TF3 series, see P2/16

选型与订货数据 Selection and ordering data

交流操作 AC operation		3TF34		3TF44		3TF35		3TF45	
									
辅助触头 Auxiliary contacts NO 常开 NC 常闭			 NO - NC		 NO - NC		 NO - NC		 NO - NC
订货号 Order No.		3TF34 00 - 0X	- -	3TF44 11 - 0X	1 1	3TF35 00 - 0X	- -	3TF45 11 - 0X	1 1
		3TF34 11 - 0X	1 1	3TF44 22 - 0X	2 2	3TF35 11 - 0X	1 1	3TF45 22 - 0X	2 2
额定绝缘电压(V)/Rated insulation voltage		690		690		690		690	
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3	32		32		38		38	
	AC - 4	15.6		15.6		18.5		18.5	
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3 230/220V	8.5		8.5		11		11	
	AC - 3 400/380V	15		15		18.5		18.5	
	AC - 3 500 V	21		21		25		25	
	AC - 3 690/660V	23		23		23		23	
	AC - 3 1000 V	- -		- -		- -		- -	
	AC - 4 400/380V	7.5		7.5		9		9	
	AC - 4 690/660V	13		13		15.5		15.5	
机械寿命(x10⁶) Mechanical endurance		10		10		10		10	
电寿命(x10⁶) Electrical endurance	AC - 3	1.2		1.2		1.2		1.2	
	AC - 4	0.2		0.2		0.2		0.2	
操作频率(1/h) Switching frequency	AC - 3	750		750		600		600	
	AC - 4	250		250		200		200	
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)		$(0.8\sim1.1)U_s$							
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(VA)/Closed	12.1		12.1		12.1		12.1	
	功率因数 p.f.	0.28		0.28		0.28		0.28	
	吸合(VA)/Closing	101		101		101		101	
	功率因数 p.f.	0.83		0.83		0.83		0.83	
约定发热电流(A) Conventional thermal current		55		55		55		55	
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts		10		10		10		10	
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts		690		690		690		690	
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V	4/6		4/6		4/6		4/6	
	DC - 13 110/220V	1.14/0.48		1.14/0.48		1.14/0.48		1.14/0.48	
重　量(kg) Weight		0.68		0.8		0.68		0.8	

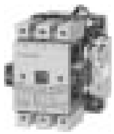
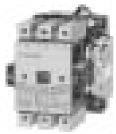
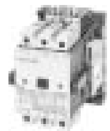
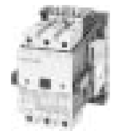
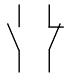
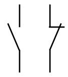
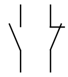
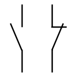
线圈电压订货号
Order No. suffixes for rated control voltages for coils

3TF3···-0X □□
3TF4···-0X □□

50Hz 线圈/Coils for 50Hz 50Hz	60Hz		60Hz 线圈/Coils for 60Hz 60Hz	50Hz		50/60Hz 线圈/Coils for 50/60Hz	
24V	29V	B0	24V	20V	C1	24V	C2
32V	38V	C0	110V	92V	G1	42V	D2
36V	42V	G0	115V	96V	J1	110V	G2
42V	50V	D0	120V	100V	K1	115V	J2
48V	58V	H0	208V	173V	M1	120V	K2
60V	72V	E0	220V	183V	N1	208V	M2
110V	132V	F0	230V	192V	L1	220V	N2
125/127V	150/152V	L0	240V	200V	P1	230V	L2
220V	264V	M0	440V	367V	R1	240V	P2
230V	277V	P0	575V	480V	S1	440V	R2
240V	288V	U0				575V	S2
380V	460V	Q0					
400V	480V	V0					
415V	500V	R0					
500V	600V	S0					

注：用于 3TF3 系列的 3TX4 辅助触头座见第 2/16 页
Note: 3TX4 auxiliary contact blocks for 3TF3 series, see P2/16.

选型与订货数据　Selection and ordering data

交流操作 AC operation			3TF46	3TF47	3TF48	3TF49
						
辅助触头 Auxiliary contacts NO 常开 NC 常闭			 NO - NC	 NO - NC	 NO - NC	 NO - NC
订货号 Order No.			3TF46 22 - 0X　2 2 3TF46 44 - 0X　4 4	3TF47 22 - 0X　2 2 3TF47 44 - 0X　4 4	3TF48 22 - 0X　2 2 3TF48 44 - 0X　4 4	3TF49 22 - 0X　2 2 3TF49 44 - 0X　4 4
额定绝缘电压(V)/Rated insulation voltage			1000	1000	1000	1000
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3		45	63	75	85
	AC - 4		24	28	34	42
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3	230/220V	15	18.5	22	26
		400/380V	22	30	37	45
		500 V	30	41	50	59
		690/660V	39	55	67	67
		1000 V	7-5	7-5	39	39
	AC - 4	400/380V	12.6/12	14.7/14	17.9/17	22/21
		690/660V	21.8/20.8	25.4/24.3	30.9/29.5	38/36
机械寿命($x10^6$) Mechanical endurance			10	10	10	10
电寿命($x10^6$) Electrical endurance	AC - 3		1.2	1.2	1.2	1.2
	AC - 4		0.2	0.2	0.2	0.2
操作频率(1/h) Switching frequency	AC - 3		1200	1000	1000	850
	AC - 4		400	300	300	250
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)			$(0.8\sim1.1)U_s$			

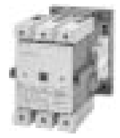
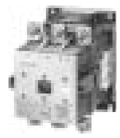
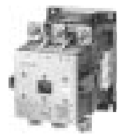
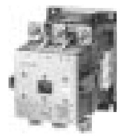
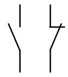
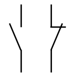
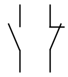
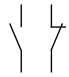
线圈电压订货号 Order No. suffixes for rated control voltages for coils
3TF46···0X □□
≀
3TF49···0X □□

50Hz 线圈 / Coils for 50Hz 50Hz	60Hz		60Hz 线圈 / Coils for 60Hz 60Hz	50Hz		50/60Hz 线圈 / Coils for 50/60Hz	
24V	29V	B0	24V	20V	C1	24V	C2
32V	38V	C0	110V	92V	G1	42V	D2
36V	42V	G0	115V	96V	J1	110V	G2
42V	50V	D0	120V	100V	K1	115V	J2
48V	58V	H0	208V	173V	M1	120V	K2
60V	72V	E0	220V	183V	N1	208V	M2
110V	132V	F0	230V	192V	L1	220V	N2
125/127V	150/152V	L0	240V	200V	P1	230V	L2
220V	264V	M0	440V	367V	R1	240V	P2
230V	277V	P0	575V	480V	S1	440V	R2
240V	288V	U0				575V	S2
380V	460V	Q0					
400V	480V	V0					
415V	500V	R0					
500V	600V	S0					

		3TF46	3TF47	3TF48	3TF49
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(VA) / Closed	17	17	32	32
	功率因数 p.f.	0.29	0.29	0.23	0.23
	吸合(VA) / Closing	183	183	330	330
	功率因数 p.f.	0.6	0.6	0.5	0.5
约定发热电流(A) Conventional thermal current		80	90	100	100
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts		10	10	10	10
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts		690	690	690	690
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V	4/6	4/6	4/6	4/6
	DC - 13 110/220V	1.14/0.48	1.14/0.48	1.14/0.48	1.14/0.48
重　量(kg) Weight		1.4/1.6	1.4/1.6	2.3/2.5	2.3/2.5

2

选型与订货数据 Selection and ordering data

交流操作 AC operation			3TF50	3TF51	3TF52	3TF53
			 3TF50	 3TF51	 3TF52	 3TF53
辅助触头 Auxiliary contacts NO 常开 NC 常闭			 NO - NC	 NO - NC	 NO - NC	 NO - NC
订货号 Order No.			3TF50 22 - 0X 2 2 3TF50 44 - 0X 4 4	3TF51 22 - 0X 2 2 3TF51 44 - 0X 4 4	3TF52 22 - 0X 2 2 3TF52 44 - 0X 4 4	3TF53 22 - 0X 2 2 3TF53 44 - 0X 4 4
额定绝缘电压(V)/Rated insulation voltage			1000	1000	1000	1000
额定工作电流(A)(380V) Rated operational current(380V)	AC - 3		110	140	170	205
	AC - 4		54	68	75	96
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3	230/220V	37	43	55	64
		400/380V	55	75	90	110
		500 V	76	98	118	145
		690/660V	100	100	156	156
		1000 V	65	65	90	90
	AC - 4	400/380V	28.4/27	36/35	40/38	52/50
		690/660V	49/46.9	63/60	69/66	90/86
机械寿命(x10⁶) Mechanical endurance			10	10	10	10
电寿命(x10⁶) Electrical endurance	AC - 3		1.2	1.2	1.2	1.2
	AC - 4		0.2	0.2	0.2	0.2
操作频率(1/h) Switching frequency	AC - 3		1000	750	700	500
	AC - 4		300	200	200	130
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)			$(0.8\sim1.1)U_s$			

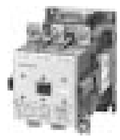
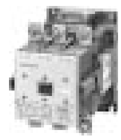
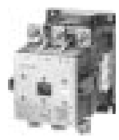
线圈电压订货号 Order No. suffixes for rated control voltages for coils

3TF50···0X □□
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3TF53···0X □□

50Hz 线圈 / Coils for 50Hz 50Hz	60Hz		60Hz 线圈 / Coils for 60Hz 60Hz	50Hz		50/60Hz 线圈 / Coils for 50/60Hz	
24V	29V	B0	24V	20V	C1	24V	C2
32V	38V	C0	110V	92V	G1	42V	D2
36V	42V	G0	115V	96V	J1	110V	G2
42V	50V	D0	120V	100V	K1	115V	J2
48V	58V	H0	208V	173V	M1	120V	K2
60V	72V	E0	220V	183V	N1	208V	M2
110V	132V	F0	230V	192V	L1	220V	N2
125/127V	150/152V	L0	240V	200V	P1	230V	L2
220V	264V	M0	440V	367V	R1	240V	P2
230V	277V	P0	575V	480V	S1	440V	R2
240V	288V	U0				575V	S2
380V	460V	Q0					
400V	480V	V0					
415V	500V	R0					
500V	600V	S0					

		3TF50	3TF51	3TF52	3TF53
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(VA) / Closed	39	39	58	58
	功率因数 p.f.	0.24	0.24	0.26	0.26
	吸合(VA) / Closing	550	550	910	910
	功率因数 p.f.	0.45	0.45	0.38	0.38
约定发热电流(A) Conventional thermal current		160	160	210	220
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts		10	10	10	10
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts		690	690	690	690
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V	4/6	4/6	4/6	4/6
	DC - 13 110/220V	1.14/0.48	1.14/0.48	1.14/0.48	1.14/0.48
重 量(kg) Weight		3.3/3.5	3.3/3.5	4.8/5.0	4.8/5.0

选型与订货数据 Selection and ordering data

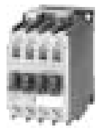
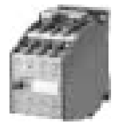
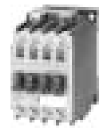
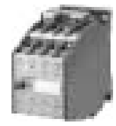
交流操作 AC operation		 3TF54	 3TF55	 3TF56
辅助触头 Auxiliary contacts NO 常开 NC 常闭		NO - NC	NO - NC	NO - NC
订货号 Order No.		3TF54 22 - 0X 2 2 3TF54 44 - 0X 4 4	3TF55 22 - 0X 2 2 3TF55 44 - 0X 4 4	3TF56 22 - 0X 2 2 3TF56 44 - 0X 4 4
额定绝缘电压(V)/Rated insulation voltage		1000	1000	1000
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3	250	300	400
	AC - 4	110	125	150
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3 230/220V	78	93	125
	AC - 3 400/380V	132	160	200
	AC - 3 500 V	178	210	284
	AC - 3 690/660V	235	235	375
	AC - 3 1000 V	132	132	250
	AC - 4 400/380V	61/58	69/66	85/81
	AC - 4 690/660V	105/100	119/114	147/140
机械寿命(x10⁶) Mechanical endurance		10	10	10
电寿命(x10⁶) Electrical endurance	AC - 3	1.2	1.2	1.2
	AC - 4	0.2	0.2	0.2
操作频率(1/h) Switching frequency	AC - 3	700	500	500
	AC - 4	200	130	150
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)		$(0.8\sim1.1)U_s$		

线圈电压订货号
Order No. suffixes for rated control voltages for coils
3TF54···0X □□
~
3TF56···0X □□

50Hz 线圈 / Coils for 50Hz 50Hz	60Hz		60Hz 线圈 / Coils for 60Hz 60Hz	50Hz		50/60Hz 线圈 / Coils for 50/60Hz	
24V	29V	B0	24V	20V	C1	24V	C2
32V	38V	C0	110V	92V	G1	42V	D2
36V	42V	G0	115V	96V	J1	110V	G2
42V	50V	D0	120V	100V	K1	115V	J2
48V	58V	H0	208V	173V	M1	120V	K2
60V	72V	E0	220V	183V	N1	208V	M2
110V	132V	F0	230V	192V	L1	220V	N2
125/127V	150/152V	L0	240V	200V	P1	230V	L2
220V	264V	M0	440V	367V	R1	240V	P2
230V	277V	P0	575V	480V	S1	440V	R2
240V	288V	U0				575V	S2
380V	460V	Q0					
400V	480V	V0					
415V	500V	R0					
500V	600V	S0					

		3TF54	3TF55	3TF56
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(VA) / Closed	84	84	115
	功率因数 p.f.	0.24	0.24	0.33
	吸合(VA) / Closing	1430	1430	2450
	功率因数 p.f.	0.34	0.34	0.21
约定发热电流(A) Conventional thermal current		300	300	400
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts		10	10	10
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts		690	690	690
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V	4/6	4/6	4/6
	DC - 13 110/220V	1.14/0.48	1.14/0.48	1.14/0.48
重　量(kg) Weight		6.2/6.4	6.2/6.4	8.5/8.7

选型与订货数据 Selection and ordering data

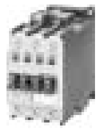
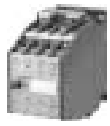
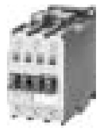
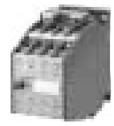
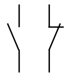
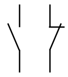
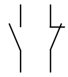
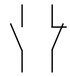
直流操作 DC operation			3TF30	3TF40	3TF31	3TF41
						
辅助触头 Auxiliary contacts NO 常开 NC 常闭			NO - NC	NO - NC	NO - NC	NO - NC
订货号 Order No.			3TF30 00 - 1X - - 3TF30 10 - 1X 1 - 3TF30 01 - 1X - 1	3TF40 10 - 1X 1 - 3TF40 01 - 1X - 1 3TF40 11 - 1X 1 1 3TF40 20 - 1X 2 - 3TF40 22 - 1X 2 2 3TF40 31 - 1X 3 1	3TF31 00 - 1X - - 3TF31 10 - 1X 1 - 3TF31 01 - 1X - 1	3TF41 10 - 1X 1 - 3TF41 01 - 1X - 1 3TF41 11 - 1X 1 1 3TF41 20 - 1X 2 - 3TF41 22 - 1X 2 2 3TF41 31 - 1X 3 1
额定绝缘电压(V) Rated insulation voltage			690	690	690	690
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3		9	9	12	12
	AC - 4		3.3	3.3	4.3	4.3
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3	230/220V 400/380V 500 V 690/660V 1000 V	2.4 4 5.5 5.5 - -	2.4 4 5.5 5.5 - -	3.3 5.5 7.5 7.5 - -	3.3 5.5 7.5 7.5 - -
	AC - 4	400/380V 690/660V	1.48/1.4 2.54/2.4	1.48/1.4 2.54/2.4	2/1.9 3.45/3.3	2/1.9 3.45/3.3
机械寿命(x10[6]) Mechanical endurance			15	15	15	15
电寿命(x10[6]) Electrical endurance	AC - 3		1.2	1.2	1.2	1.2
	AC - 4		0.2	0.2	0.2	0.2
操作频率(1/h) Switching frequency	AC - 3		1000	1000	1000	1000
	AC - 4		250	250	250	250
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)			(0.8~1.1)U_s			

线圈电压订货号 Order No. suffixes for rated control voltages for coils 3TF3···-1X □□ 3TF4···-1X □□																
额定控制电压	Rated control voltage V DC	12	21.5	24	30	36	42	48	60	110	125	180	220	230	240	250
订货号	Order No. suffix	A4	U4	B4	C4	V4	D4	W4	E4	F4	G4	K4	M4	P4	Q4	N4

		3TF30	3TF40	3TF31	3TF41
吸引线圈功率消耗 Power consumption of coil (50Hz)	吸合和保持(W) Closing and Closed	6.2	6.2	6.2	6.2
约定发热电流(A) Conventional thermal current		20	20	20	20
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts		10	10	10	10
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts		690	690	690	690
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V	6/10	6/10	6/10	6/10
	DC - 13 110/220V	0.9/0.45	0.9/0.45	0.9/0.45	0.9/0.45
重 量(kg) Weight		0.58	0.64	0.58	0.64

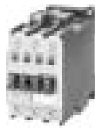
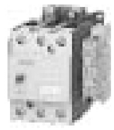
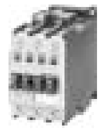
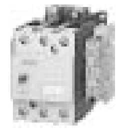
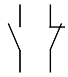
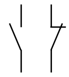
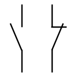
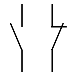
注：用于 3TF3 系列的 3TX4 辅助触头座见第 2/16 页
Note: 3TX4 auxiliary contact blocks for 3TF3 series, see P2/16.

选型与订货数据 Selection and ordering data

直流操作 DC operation		3TF32		3TF42		3TF33		3TF43	
									
辅助触头 Auxiliary contacts NO 常开 NC 常闭			 NO - NC		 NO - NC		 NO - NC		 NO - NC
订货号 Order No.		3TF32 00 - 1X 3TF32 11 - 1X	- - 1 1	3TF42 10 - 1X 3TF42 11 - 1X 3TF42 20 - 1X 3TF42 22 - 1X	1 - 1 1 2 - 2 2	3TF33 00 - 1X 3TF33 11 - 1X	- - 1 1	3TF43 10 - 1X 3TF43 11 - 1X 3TF43 20 - 1X 3TF43 22 - 1X	1 - 1 1 2 - 2 2
额定绝缘电压(V) Rated insulation voltage		690		690		690		690	
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3	16		16		22		22	
	AC - 4	7.7		7.7		8.5		8.5	
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3 230/220V 400/380V 500 V 690/660V 1000 V	4 7.5 9 11 - -		4 7.5 9 11 - -		5.5 11 11 11 - -		5.5 11 11 11 - -	
	AC - 4 400/380V 690/660V	3.5 6		3.5 6		4 6.6		4 6.6	
机械寿命(x10^6) Mechanical endurance		15		15		15		15	
电寿命(x10^6) Electrical endurance	AC - 3	1.2		1.2		1.2		1.2	
	AC - 4	0.2		0.2		0.2		0.2	
操作频率(1/h) Switching frequency	AC - 3	750		750		750		750	
	AC - 4	250		250		250		250	
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)		(0.8~1.1)U_s							
线圈电压订货号 Order No. suffixes for rated control voltages for coils 3TF3···-1X □□ 3TF4···-1X □□		额定控制电压 Rated control voltage V DC: 24 / 48 / 110 / 125 / 220 订货号 Order No. suffix: B4 / W4 / F4 / G4 / M4							
吸引线圈功率消耗 Power consumption of coil (50Hz)	吸合和保持(W) Closing and Closed	6.2		6.2		6.2		6.2	
约定发热电流(A) Conventional thermal current		30		30		30		30	
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts		10		10		10		10	
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts		690		690		690		690	
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V	4/6		6/10		4/6		6/10	
	DC - 13 110/220V	1.14/0.48		0.9/0.45		1.14/0.48		0.9/0.45	
重 量(kg) Weight		0.70		0.66		0.70		0.66	

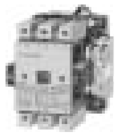
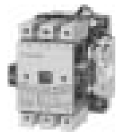
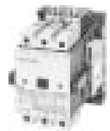
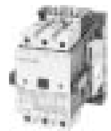
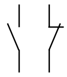
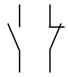
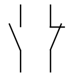
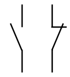
注：用于3TF3系列的3TX4辅助触头座见第2/16页
Note: 3TX4 auxiliary contact blocks for 3TF3 series, see P2/16.

选型与订货数据 Selection and ordering data

直流操作 DC operation			 3TF34	 3TF44	 3TF35	 3TF45
辅助触头 Auxiliary contacts NO 常开 NC 常闭			 NO - NC	 NO - NC	 NO - NC	 NO - NC
订货号 Order No.			3TF34 00 - 1X (- -) 3TF34 11 - 1X (1 1)	3TF44 11 - 1X (1 1) 3TF44 22 - 1X (2 2)	3TF35 00 - 1X (- -) 3TF35 11 - 1X (1 1)	3TF45 11 - 1X (1 1) 3TF45 22 - 1X (2 2)
额定绝缘电压(V) Rated insulation voltage			690	690	690	690
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3		32	32	38	38
	AC - 4		15.6	15.6	18.5	18.5
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3	230/220V 400/380V 500 V 690/660V 1000 V	8.5 15 21 23 - -	8.5 15 21 23 - -	11 18.5 25 23 - -	11 18.5 25 23 - -
	AC - 4	400/380V 690/660V	7.5 13	7.5 13	9 15.5	9 15.5
机械寿命($x10^6$) Mechanical endurance			10	10	10	10
电寿命($x10^6$) Electrical endurance	AC - 3		1.2	1.2	1.2	1.2
	AC - 4		0.2	0.2	0.2	0.2
操作频率(1/h) Switching frequency	AC - 3		750	750	600	600
	AC - 4		250	250	200	200
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)			$(0.8\sim1.1)U_s$			
线圈电压订货号 Order No. suffixes for rated control voltages for coils 3TF3···-1X □□ 3TF4···-1X □□			额定控制电压 Rated control voltage V DC: 24 / 48 / 110 / 125 / 220 订货号 Order No. suffix: B4 / W4 / F4 / G4 / M4			
吸引线圈功率消耗 Power consumption of coil (50Hz)	吸合和保持(W) Closing and Closed		11.7	11.7	11.7	11.7
约定发热电流(A) Conventional thermal current			55	55	55	55
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts			10	10	10	10
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts			690	690	690	690
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V		4/6	4/6	4/6	4/6
	DC - 13 110/220V		1.14/0.48	1.14/0.48	1.14/0.48	1.14/0.48
重 量(kg) Weight			1.25	1.43	1.25	1.43

注：用于 3TF3 系列的 3TX4 辅助触头座见第 2/16 页
Note: 3TX4 auxiliary contact blocks for 3TF3 series, see P2/16.

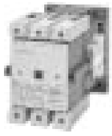
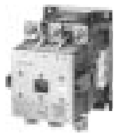
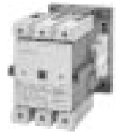
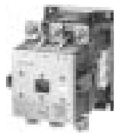
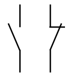
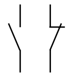
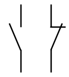
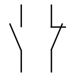
选型与订货数据 Selection and ordering data

			3TF46	3TF47	3TF48	3TF49
直流操作 DC operation			 3TF46	 3TF47	 3TF48	 3TF49
辅助触头 Auxiliary contacts NO 常开　NC 常闭			 NO - NC	 NO - NC	 NO - NC	 NO - NC
订货号 Order No.			3TF46 22 - 1X　2 2 3TF46 33 - 1X　3 3	3TF47 22 - 1X　2 2 3TF47 33 - 1X　3 3	3TF48 22 - 1X　2 2 3TF48 33 - 1X　3 3	3TF49 22 - 1X　2 2 3TF49 33 - 1X　3 3
额定绝缘电压(V) Rated insulation voltage			1000	1000	1000	1000
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3		45	63	75	85
	AC - 4		24	28	34	42
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3	230/220V	15	18.5	22	26
		400/380V	22	30	37	45
		500 V	30	41	50	59
		690/660V	39	55	67	67
		1000 V	7-5	7-5	39	39
	AC - 4	400/380V	12.6/12	14.7/14	17.9/17	22/21
		690/660V	21.8/20.8	25.4/24.3	30.9/29.5	38/36
机械寿命($x10^6$) Mechanical endurance			3	3	3	3
电寿命($x10^6$) Electrical endurance	AC - 3		1.2	1.2	1.2	1.2
	AC - 4		0.2	0.2	0.2	0.2
操作频率(1/h) Switching frequency	AC - 3		1200	1000	1000	850
	AC - 4		400	300	300	250
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)			$(0.8 \sim 1.1)U_s$			

线圈电压订货号 Order No. suffixes for rated control voltages for coils 3TF46···1X □□ ~ 3TF49···1X □□						
额定 控制电压	Rated control voltage	V DC 24	48	110	125	220
订货号	Order No. suffix	B4	W4	F4	G4	M4

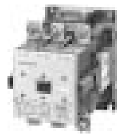
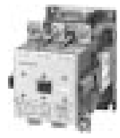
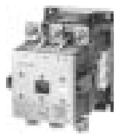
			3TF46	3TF47	3TF48	3TF49
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(W) Closed		2.1	2.1	2.7	2.7
	吸合(W) Closing		400	400	420	420
约定发热电流(A) Conventional thermal current			80	90	100	100
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts			10	10	10	10
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts			690	690	690	690
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V		4/6	4/6	4/6	4/6
	DC - 13 110/220V		1.14/0.48	1.14/0.48	1.14/0.48	1.14/0.48
重　量(kg) Weight			1.4/1.6	1.4/1.6	2.3/2.5	2.3/2.5

选型与订货数据 Selection and ordering data

直流操作 DC operation			3TF50	3TF51	3TF52	3TF53
						
辅助触头 Auxiliary contacts NO 常开 NC 常闭			 NO - NC	 NO - NC	 NO - NC	 NO - NC
订货号 Order No.			3TF50 22 - 1X 2 2 3TF50 33 - 1X 3 3	3TF51 22 - 1X 2 2 3TF51 33 - 1X 3 3	3TF52 22 - 1X 2 2 3TF52 33 - 1X 3 3	3TF53 22 - 1X 2 2 3TF53 33 - 1X 3 3
额定绝缘电压(V) Rated insulation voltage			1000	1000	1000	1000
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3		110	140	170	205
	AC - 4		54	68	75	96
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3	230/220V 400/380V 500 V 690/660V 1000 V	37 55 76 100 65	43 75 98 100 65	55 90 118 156 90	64 110 145 156 90
	AC - 4	400/380V 690/660V	28.4/27 49/46.9	36/35 63/60	40/38 69/66	52/50 90/86
机械寿命(x10^6) Mechanical endurance			3	3	3	3
电寿命(x10^6) Electrical endurance	AC - 3		1.2	1.2	1.2	1.2
	AC - 4		0.2	0.2	0.2	0.2
操作频率(1/h) Switching frequency	AC - 3		1000	750	700	500
	AC - 4		300	200	200	130
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)			(0.8~1.1)U_s			
线圈电压订货号 Order No. suffixes for rated control voltages for coils 3TF50···1X □□ ~ 3TF53···1X □□			额定控制电压 Rated control voltage V DC	24	48	110	125	220
			订货号 Order No. suffix	B4	W4	F4	G4	M4
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(W) Closed		2.7	2.7	11	11
	吸合(W) Closing		500	500	876	876
约定发热电流(A) Conventional thermal current			160	160	210	220
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts			10	10	10	10
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts			690	690	690	690
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V		4/6	4/6	4/6	4/6
	DC - 13 110/220V		1.14/0.48	1.14/0.48	1.14/0.48	1.14/0.48
重 量(kg) Weight			3.3/3.5	3.3/3.5	5.4/5.6	5.4/5.6

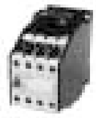
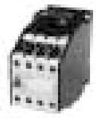
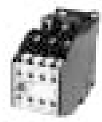
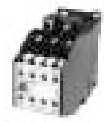
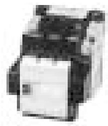
注：3TF52～3TF56 直流操作接触器所必需的切换接触器包含在接触器包装中一起发货。
Note: The changeover contactor of 3TF52～3TF56 DC operation contactors is included in the delivery and contained in the contactor package.

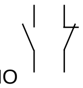
选型与订货数据 Selection and ordering data

直流操作 DC operation		3TF54		3TF55		3TF56	
							
辅助触头 Auxiliary contacts NO 常开 NC 常闭			NO - NC		NO - NC		NO - NC
订货号 Order No.		3TF54 22 - 1X 3TF54 33 - 1X	2 2 3 3	3TF55 22 - 1X 3TF55 33 - 1X	2 2 3 3	3TF56 22 - 1X 3TF56 33 - 1X	2 2 3 3
额定绝缘电压(V) Rated insulation voltage		1000		1000		1000	
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3	250		300		400	
	AC - 4	110		125		150	
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3 230/220V	78		93		125	
	AC - 3 400/380V	132		160		200	
	AC - 3 500 V	178		210		284	
	AC - 3 690/660V	235		235		375	
	AC - 3 1000 V	132		132		250	
	AC - 4 400/380V	61/58		69/66		85/81	
	AC - 4 690/660V	105/100		119/114		147/140	
机械寿命($x10^6$) Mechanical endurance		3		3		3	
电寿命($x10^6$) Electrical endurance	AC - 3	1.2		1.2		1.2	
	AC - 4	0.2		0.2		0.2	
操作频率(1/h) Switching frequency	AC - 3	700		500		500	
	AC - 4	200		130		150	
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)		$(0.8\sim1.1)U_s$					
线圈电压订货号 Order No. suffixes for rated control voltages for coils 3TF54···1X □□ ~ 3TF56···1X □□		额定控制电压 Rated control voltage V DC: 24 / 48 / 110 / 125 / 220					
		订货号 Order No. suffix: B4 / W4 / F4 / G4 / M4					
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(W) Closed	13.3		13.3		14	
	吸合(W) Closing	1216		1216		1306	
约定发热电流(A) Conventional thermal current		300		300		400	
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts		10		10		10	
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts		690		690		690	
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V	4/6		4/6		4/6	
	DC - 13 110/220V	1.14/0.48		1.14/0.48		1.14/0.48	
重　量(kg) Weight		6.8/7.0		6.8/7.0		9.2/9.4	

注：3TF52～3TF56 直流操作接触器所必需的切换接触器包含在接触器包装中一起发货。
Note: The changeover contactor of 3TF52～3TF56 DC operation contactors is included in the delivery and contained in the contactor package.

选型与订货数据 Selection and ordering data

交流操作 AC operation		 3TB40	 3TB41	 3TB42	 3TB43	 3TB44
辅助触头 Auxiliary contacts NO 常开　NC 常闭		NO - NC	NO - NC	NO - NC	NO - NC	NO - NC
订货号 Order No.		3TB40 10 - 0X　1 - 3TB40 01 - 0X　- 1 3TB40 22 - 0X　2 2	3TB41 10 - 0X　1 - 3TB41 01 - 0X　- 1 3TB41 22 - 0X　2 2	3TB42 22 - 0X　2 2	3TB43 22 - 0X　2 2	3TB44 22 - 0X　2 2
额定绝缘电压(V) Rated insulation voltage		660	660	660	660	660
额定工作电流(A) (380V) Rated operational current (380V)	AC - 3	9	12	16	22	32
	AC - 4	3.3	4.3	7.7	8.5	15.6
可控电机功率(KW) Rated outputs of three-phase motors at 50Hz	AC - 3　230/220V	2.4	3.3	4	6.1	8.5
	400/380V	4	5.5	7.5	11	15
	500 V	5.5	7.5	10	11	21
	690/660V	5.5	7.5	11	11	23
	1000 V	- -	- -	- -	- -	- -
	AC - 4　400/380V	1.4	1.9	3.5	4	7.5
	690/660V	2.4	3.3	6	6.6	13
机械寿命($x10^6$) Mechanical endurance		10	10	10	10	10
电寿命($x10^6$) Electrical endurance	AC - 3	1.0	1.0	1.0	1.0	1.0
	AC - 4	0.2	0.2	0.2	0.2	0.2
操作频率(1/h) Switching frequency	AC - 3	1000	1000	750	750	750
	AC - 4	250	250	250	250	250
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)		$(0.8\sim1.1)U_s$				
线圈电压订货号 Order No. suffixes for rated control voltages for coils 3TB40…0X □□ ≀ 3TB44…0X □□		50Hz 线圈 / Coils for 50Hz V AC			50/60Hz 线圈 / Coils for 50/60Hz V AC	
		24　B0 42　D0 110　F0 220　M0 240　U0 380　Q0			24　C2 42　D2 110　G2 220　N2 240　P2	
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(VA) / Closed	10	10	10	10	10
	功率因数 p.f.	0.29	0.29	0.29	0.29	0.29
	吸合(VA) / Closing	68	68	68	68	69
	功率因数 p.f.	0.82	0.82	0.82	0.82	0.86
约定发热电流(A) Conventional thermal current		20	20	30	30	45
辅助触头约定发热电流(A) Conventional thermal current of auxiliary contacts		10	10	10	10	10
辅助触头额定绝缘电压(V) Rated insulation voltage of auxiliary contacts		660	660	660	660	660
辅助触头额定工作电流(A) Rated operational current of auxiliary contacts	AC - 15 380/220V	6/10	6/10	6/10	6/10	4/6
	DC - 13 110/220V	0.9/0.45	0.9/0.45	0.9/0.45	0.9/0.45	1.8/0.9
重　量(kg) Weight		0.43	0.43	0.49	0.49	0.7

3TF 备件						Spare Parts
型号 Type	所配接触器型号 Contactor size	触头型式 Contacts No  NO	NC	订货号 Order No	说明 Illustration	重量 Weight kg
	3TF32 11, 3TF33 11	1	1	3TX4 011 - 8A	左侧辅助触头 Auxiliary contacts left	0.042
	3TF34 11, 3TF35 11	1	1	3TY7 561 - 1AA00	左侧辅助触头 Auxiliary contacts left	
	3TF44 - 3TF56	1	1	3TY7 561 - 1AA00	左侧辅助触头 Auxiliary contacts left	
		1	1	3TY7 561 - 1AA00	右侧辅助触头 Auxiliary contacts right	
3TY75 61-1. 辅助触头组 Auxiliary contacts block	3TF46 - 3TF56	1	1	3TY7 561 - 1KA00	左侧第二组辅助触头组 2nd auxiliary contacts left	
		1	1	3TY7 561 - 1KA00	右侧第二组辅助触头组 2nd auxiliary contacts right	
	3TF30 - 3TF33 3TF40 - 3TF43 3TH3 - 3TH4			3TY7 403 - 0X..	双线圈从 3TF48 开始 Double coil from 3TF48	0.07
	3TF34 - 3TF35 3TF44 - 3TF45			3TY7 443 - 0X..		0.1
	3TF46, 3TF47			3TY7 463 - 0X..		0.12
	3TF48, 3TF49			3TY7 483 - 0X..		0.2
	3TF50, 3TF51			3TY7 503 - 0X..		0.23
线圈 Coil	3TF52, 3TF53			3TY7 523 - 0X..		0.35
	3TF54, 3TF55			3TY7 543 - 0X..		0.39
	3TF56			3TY7 563 - 0X..		0.56
 3TX40.. - ..	3TF30 - 3TF35 3TH3					
	3TF44 3TF45			3TY74 40 - 0X 3TY74 50 - 0X	3 件触桥和 6 件触头为 1 套 Three pieces of contact bridge and six pieces of contacts consists of one sets	0.1
	3TF46 3TF47			3TY74 60 - 0X 3TY74 70 - 0X		0.1
	3TF48 3TF49			3TY74 80 - 0X 3TY74 90 - 0X		0.13
	3TF50 3TF51			3TY75 00 - 0X 3TY75 10 - 0X		0.25
3TY7..0 - 0X 触桥 Contact bridge	3TF52 3TF53			3TY75 20 - 0X 3TY75 30 - 0X		0.3
触头 Contacts	3TF54 3TF55			3TY75 40 - 0X 3TY75 50 - 0X		0.47
	3TF56			3TY75 60 - 0X		0.73
	3TF44 3TF45			3TY74 42 - 0X 3TY74 52 - 0X	灭弧室 Arcing chamber	0.15
	3TF46 3TF47			3TY74 62 - 0X 3TY74 72 - 0X		0.28
	3TF48 3TF49			3TY74 82 - 0X 3TY74 92 - 0X		0.45
	3TF50 3TF51			3TY75 01 - 0X 3TY75 12 - 0X		0.75
3TY7..2 - 0X 灭弧室 Arcing chamber	3TF52 3TF53			3TY75 22 - 0X 3TY75 32 - 0X		1
	3TF54 3TF55			3TY75 42 - 0X 3TY75 52 - 0X		1.3
	3TF56			3TY75 62 - 0X		1.7

辅助触头座 Auxiliary contact blocks

当需要外加辅助触头时，可选用 3TX4 型辅助触头座。(请注意：接触器中只有 3TF3 系列可以加装 3TX4)。
3TF3 系列接触器上最多可同时插装 4 个 INO 或 INC 的 3TX4 型辅助触头座。
When an additional auxiliary contact is needed, you can select the 3TX4 auxiliary contact block for the 3TF3 contactors only.
Up to 4 auxiliary contact blocks with 1NO or 1NC contact can be plugged onto 3TF3 contactors.

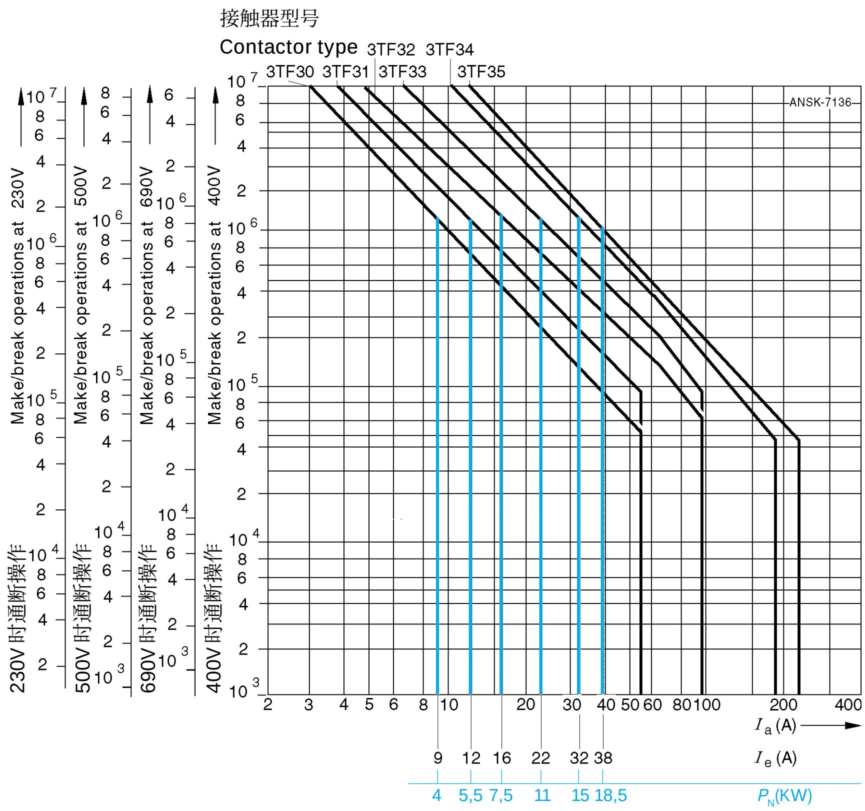
安装尺寸见 3TH30 安装尺寸图。
Mounting see 3TH30 mounting size figure

	额定工作电流 Rated operational current I_e/AC - 15/AC - 14				触头 Contacts		订货号 Order No.	重量 Weight
	230/ 220V A	400/ 380V A	500V A	690/ 660V A	NO	NC		kg
 3TX4	5.6/6	3.8/4	2.5	1.8/2	1	-	3TX4 010 - 2A	0.02
					-	1	3TX4 001 - 2A	
					1	-	3TX4 010 - 3A*	

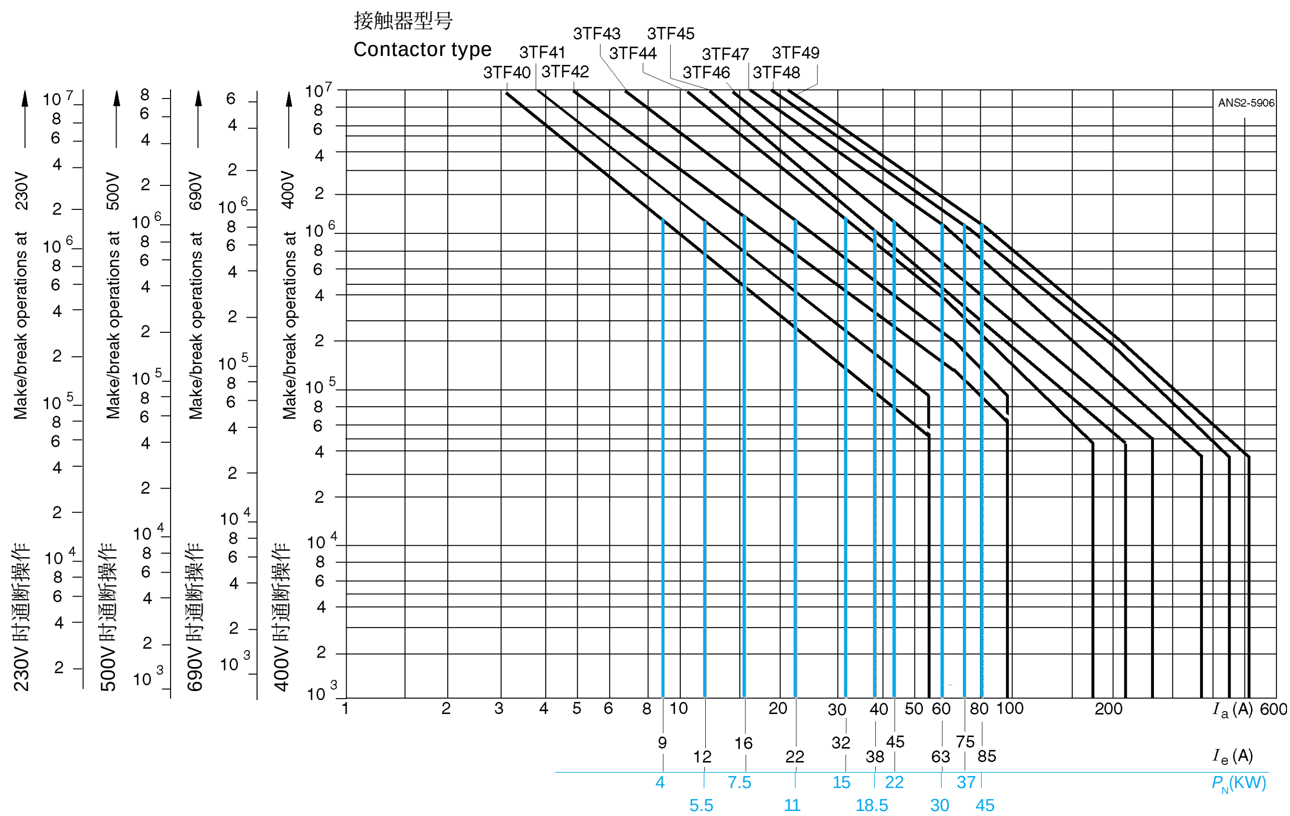
* 3TX4010 - 3A 带开关位置指示
3TX4010 - 3A with switch position indicator

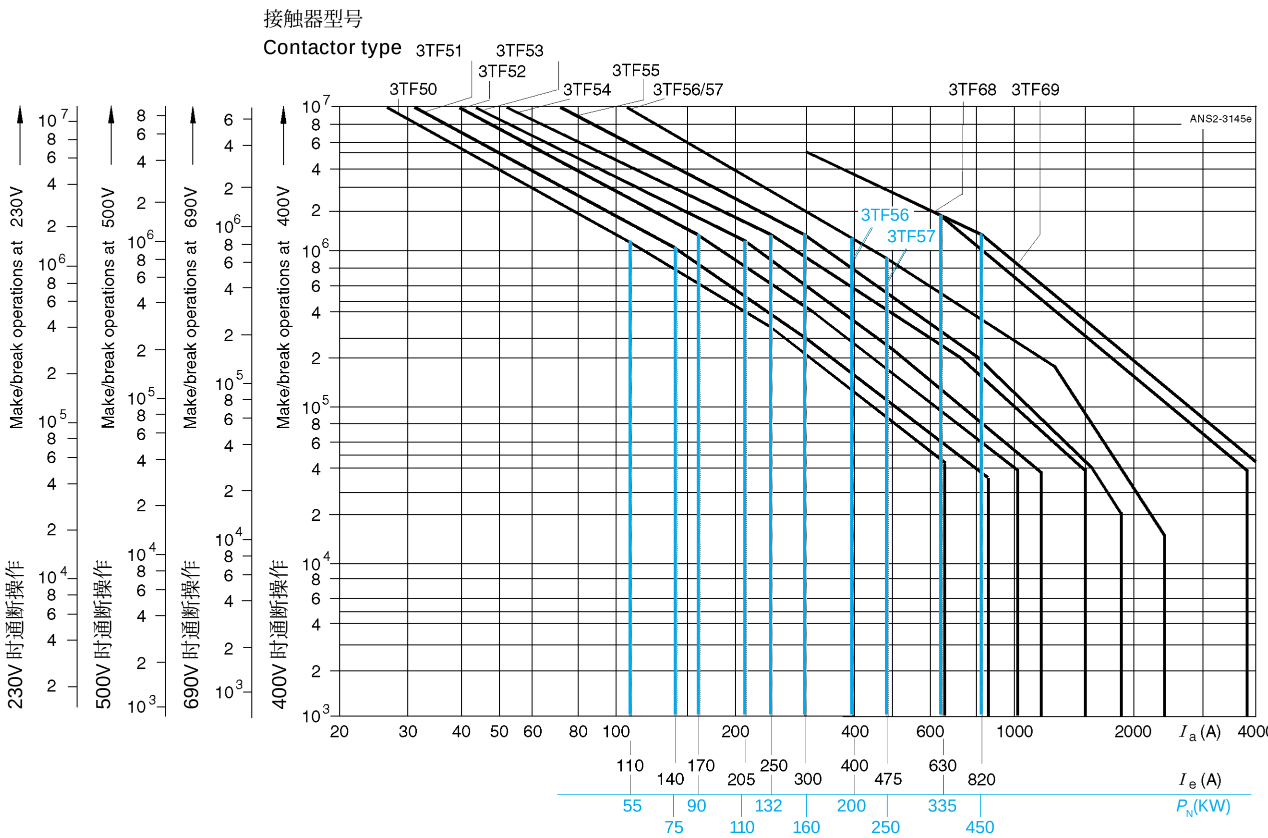
技术数据 Technical data

主触头电寿命(AC-3):
Contact endurance of the main contacts (AC-3):



技术数据 Technical data



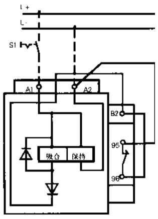


I_a: 分断电流
Breaking current

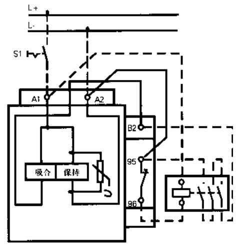
I_e: 额定工作电流
Rated operational current

P_N: 三相交流鼠笼电动机的额定功率 (400V)
Rated output of three-phase motors with squirrel-cage (at 400V)

直流线圈回路　DC circuit diagrams



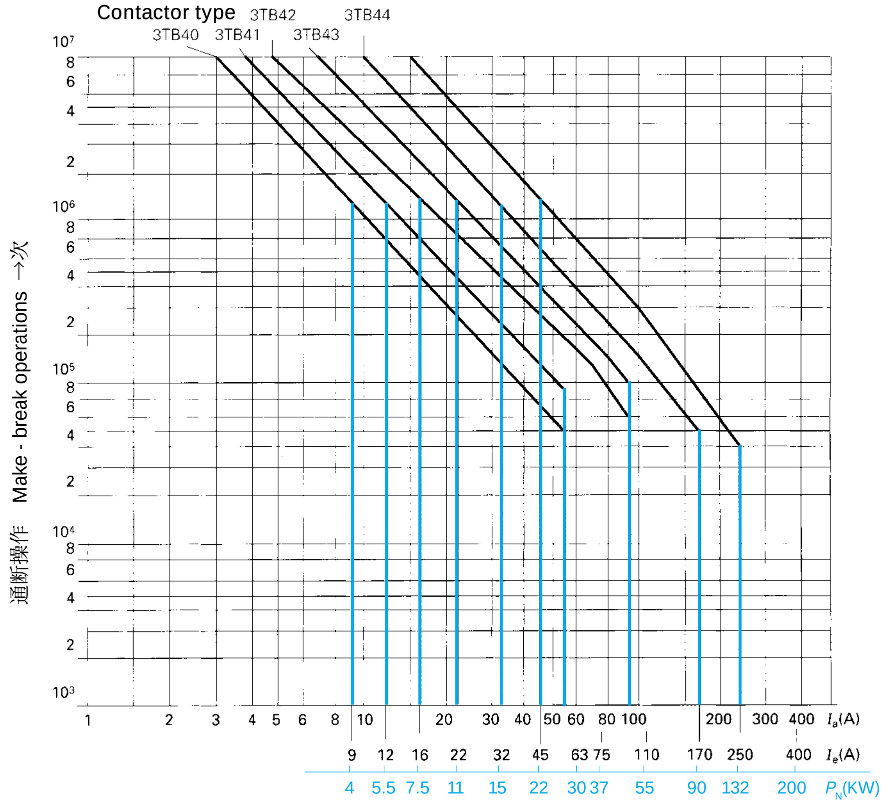
3TF46-3TF51
直流经济电路
DC economy circuit



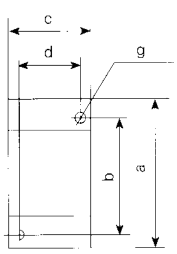
3TF52-3TF56
直流经济电路
由主接触器和切换接触器组成
DC economy circuit
with changeover contactor:
3TF52～3TF55 : 3TF40
3TF56 : 3TF42

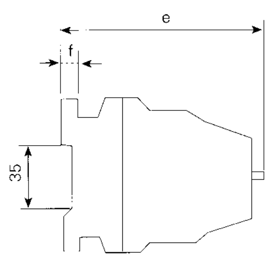
技术数据　Technical data

主触头电寿命(AC-3):
Contact endurance of the main contacts (AC-3):



外型及安装尺寸　Dimension drawings



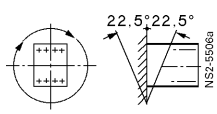


型号 Type	a	b	c	d	e	f	g
3TB40, 3TB41	79	60	46	35	*90 106	7.5	ø5
3TB42, 3TB43	89	75	46	35	116	8	ø5
3TB44	90	75	74	50	109	8	ø5

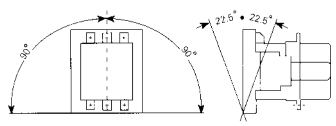
* 尺寸 90 适用于 3TB4010, 3TB4001, 3TB4110, 3TB4101
尺寸 106 适用于 3TB4011, 3TB4022, 3TB4111, 3TB4122
* Size 90 is suitable for 3TB4010, 3TB4001, 3TB4110, 3TB4101
Size 106 is suitable for 3TB4011, 3TB4022, 3TB4111, 3TB4122

允许安装位置　Permissible Mounting Position

接触器必须安装在如下图所示的垂直表面上
The contactors are designed for operation on vertical mounting surface.

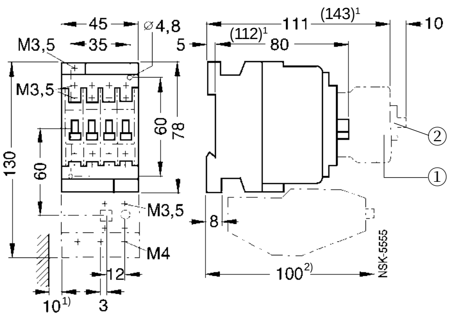


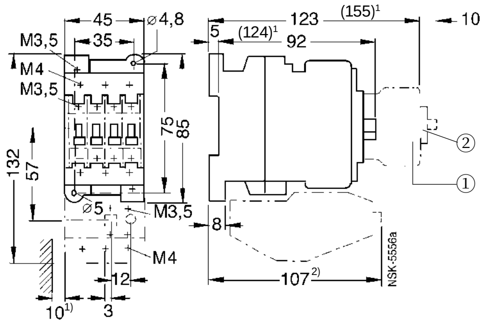
3TB40-3TB43



3TB44

外型及安装尺寸 Dimension drawings





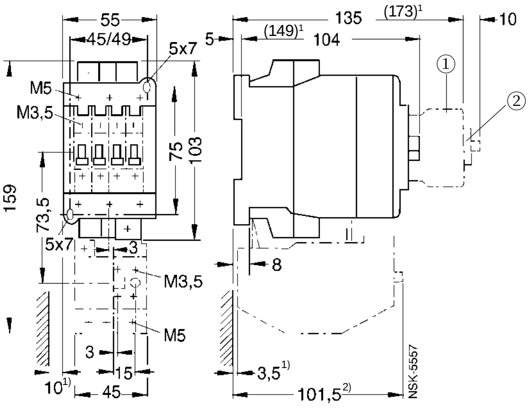
3TF30 和 3TF31，0 级
3TF30 and 3TF31, size 0

3TF32 和 3TF33，1 级
3TF32 and 3TF33, size 1

① 3TX4 型辅助触头座，带开关位置指示
Auxiliary contact block with position indicator
② 标志牌
Labelling plate

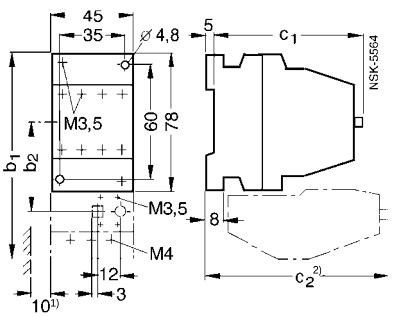
可单独使用，也可与 3UA52 或 3UW13 配合使用
Without and with overload relay (3UA52 or 3UW13)

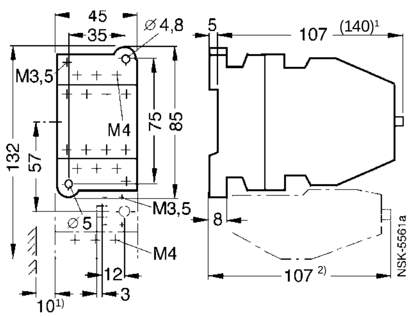
可单独使用，也可与 3UA50 或 3UW10 配合使用
Without and with overload relay (3UA50 or 3UW10)

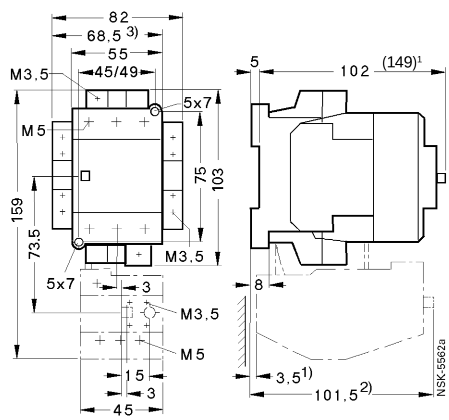


3TF34 和 3TF35，2 级
3TF34 and 3TF35, size 2

可单独使用，也可与 3UA55 配合使用
Without and with overload relay (3UA55)







3TF40 和 3TF41，0 级
3TF40 and 3TF41, size 0

可以与 3UA50 或 3UW10 配合使用，也可单独使用
With and without 3UA50 or 3UW10
overload relay

3TF42 和 3TF43，1 级
3TF42 and 3TF43, size 1

可以与 3UA52 或 3UW13 配合使用，也可单独使用
With and without 3UA52 or 3UW13
overload relay

3TF44 和 3TF45，2 级
3TF44 and 3TF45, size 2

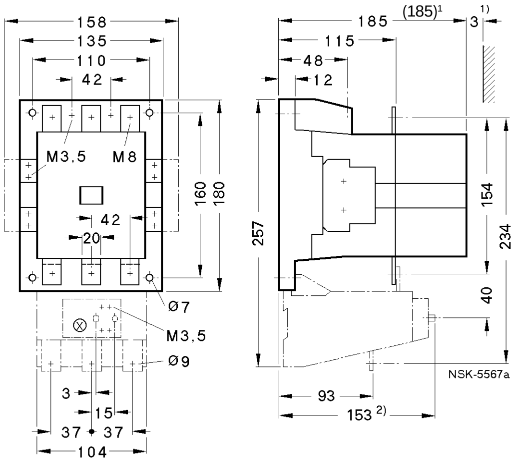
可以与 3UA55 配合使用，也可单独使用
With and without 3UA55
overload relay

接触器型号 Contactor Type	b_1	b_2	c_1	$(c_1)^3$	c_2
1NO or 1NC	125	55	81	(115)³	108
1NO+1NC or 2NO+2NC	130	60	97	(130)³	100

( )³ 直流操作接触器
DC operation

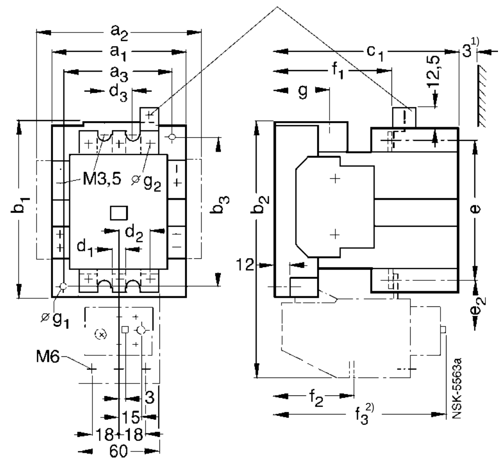
¹⁾离接地体最小间隙
Minimum clearance from the earthed parts
²⁾到方形 OFF 按钮(行程 3mm)的距离
Dimension for the square OFF - button (stroke 3mm)
到圆形 RESET 按钮(行程 2.5mm)的距离要小 2.5mm
Dimension for the round RESET - button (stroke 2.5mm) less 2.5mm

外型及安装尺寸 Dimension drawings



3TF52，8级
3TF52, size 8

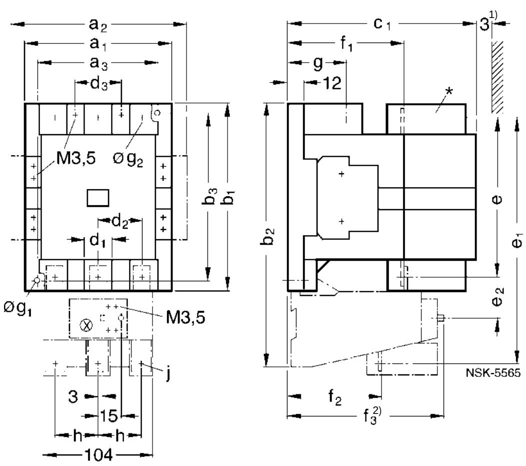
可单独使用，也可与3UA62配合使用
Without and with 3UA62 overload relay



3TF46到3TF49，3级和4级
3TF46 to 3TF49, size 3 and 4

可与3UA58配合使用，也可单独使用
With and without 3UA58 overload relay

尺寸 Size	型号 Type	a_1	a_2	a_3	b_1	b_2	b_3	c_1	$(c_1)^1$	d_1	d_2	d_3	e	e_2	f_1	f_2	f_3	g	$øg_1$	$øg_2$
3	3TF46, 3TF47	90	113	70	117	175	100	123	123	8	26.5	25	94	34	80	63	122	28	4.8	6.1(M6)
4	3TF48	100	123	80	133	194	110	140	140	8	26.5	25	107	36	89	63	122	39	5.5	6.1(M6)
4	3TF49	100	123	80	133	194	110	140	140	10.5	26.5	25	116	31.5	89	63	122	39	5.5	6.1(M6)



3TF50和3TF51, 6级(3TF50有端子盒)
3TF50 and 3TF51, size 6 (box terminal with 3TF50)

可单独使用，也可与热过载继电器配合使用
With and without overload relay
3UA60(有端子盒)与3TF50相配
3UA60 (with box terminals) for 3TF50
3UA61(无端子盒)与3TF51相配
3UA61 (with box terminals) for 3TF51

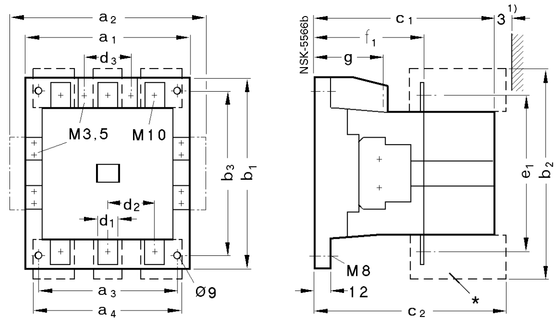
型号 Type	h	j
3UA60	37	M6
3UA61	42	M8

* 3TF51不带端子盒，作为附件选配
3TF51 hasn't box terminals, Accessories

型号 Type	a_1	a_2	a_3	b_1	b_2	b_3	c_1	$(c_1)^1$	d_1	d_2	d_3	e	e_1	e_2	f_1	f_2	f_3	g	$øg_1$	$øg_2$
3TF50	120	143	100	150	232	130	150	150	15	37	37	130	213	40	93	80	146	45	6.3	6.1(M6)
3TF51	120	143	100	150	232	130	150	150	20	42	37	139	215.5	40.5	93	80	146	45	6.3	9(M8)

( )[1] 直流操作接触器
DC operation

外型及安装尺寸 Dimension drawings



3TF53 到 3TF56, 8~12 级
3TF53 to 3TF56, size 8~12

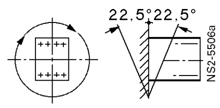
型号 Type	a_1	a_2	a_3	b_1	b_3	c_1	$(c_1)^1$	e_1	f_1	g	d_1	d_2	$øg_1$
3TF53	135	158	110	180	160	185	185	159	115	48	25	48	7
3TF54, 3TF55	145	168	120	200	180	198	198	168	132	58	25	48	9
3TF53	160	183	130	200	180	222	222	178	150	65	25	48	9

* 端子盒(附件)
With box terminals
(Accessories)

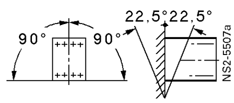
( )[1] 直流操作接触器
DC operation

允许安装位置 Permissible mounting position

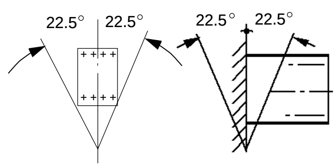
接触器必须安装在如下图所示的垂直表面上。
The contactors are designed for operation on vertical mounting surface.



3TF30 - 3TF33 (交流操作 / AC operation)
3TF40 - 3TF43 (交流操作 / AC operation)



3TF34 - 3TF35 (交流操作 / AC operation)
3TF44 - 3TF56 (交流操作 / AC operation)
3TF30 - 3TF33 (直流操作 / DC operation)
3TF40 - 3TF43 (直流螺线管系统 / DC solenoid system)
3TF46 - 3TF56 (直流经济回路 / DC economy circuit)



3TF34, 3TF35 (直流操作 / DC operation)
3TF44, 3TF45 (直流螺线管系统 / DC solenoid system)

说明 Description

3TD系列机械联锁可逆接触器为交流50Hz或60Hz，额定绝缘电压为690-1000V，在AC-3使用类别下额定工作电压为380V时的额定工作电流为9A-400A。主要用于控制交流电动机正反转。符合IEC947, VDE0660, GB 14048等标准。

3TD Reversing Contactor Combinations are suitable for frequency of 50/60Hz, rated insulation voltage up to 690 ~ 1000V, rated operational current 9A ~ 400A at rated operational voltage 380V under AC - 3. They are mainly used for controlling the forward and reverse rotation. They comply with IEC947, VDE0660, GB14048.

工作条件 Operating Conditions

- 海拔高度不超过2000米；
- 周围环境温度：-25~+55ºC
- 空气相对湿度：在+40ºC时不超过50%，+25ºC时不超过90%;
- 大气条件：没有会引起爆炸危险的介质，也没有腐蚀金属和破坏绝缘的气体和导电尘埃；
- 在无显著摇动和冲击振动的地方；
- 在没有雨雪侵袭的地方。

- The altitude of the site of installation does not exceed 2000 meters above sea levels.
- The ambient air temperature: -25 ~ +55ºC
- Relative humidity does not exceed 50% at +40ºC and 90% at +25ºC
- Atmospheric conditions: the air does not contain any explosive medium, corrosive gases and conductive dust.
- Never be shocked and vibrated obviously.
- Never be wetted by rain and snow.

结构特点 Features

- 由两台同型号的交流接触器3TF构成，通过机械联锁机构互锁；
- 机械联锁机构对单台交流接触器的动作时间无影响；
- 产品主回路，辅助回路导线已连接(也可以供不接线产品)。
- 结构紧凑，联锁可靠；
- 热过载继电器3UA可插接安装于3TD上(3TD42以上)。

- It is a Combinations consisting of two same type sets of 3TF AC contactors, between which one is interlocked by another through a mechanical device.
- The mechanical interlocking device does not affect the acting time of a single set of AC contactors.
- The conducting wires of the main circuit and auxiliary circuit have been connected. (The products without connection can also be suplied.)
- Compact in size, reliable in interlocking.
- The overload relays 3UA can be mounting directly on the 3TD (up to 3TD42).

型号说明 Type model nomenclature

3TD □□ 0 □ -0X □□

- 线圈电压代号 Code of coil voltages
- 每台接触器辅助触头数代号 Code of aux. contacts per contactor
- 防护等级：IP00 Degree of protection
- 规格代号 Code of specification
- 机械联锁可逆接触器 Reversing Contactor Combinations

3TD □□ 0 □ -0X □□ -Z1

- 无导线，无面板 Without wires and identification plate

选型与订货数据 Selection and ordering data

- 机械寿命：10x10⁶ 次；
- 操作时间：一台接触器的触头接通时间与另一台接触器的触头燃弧时间不得重叠；
- 其它技术参数同 3TF，例如：3TD40 见 3TF40;
- 参数与订货规格。

- Mechanical endurance: 10 x10^6 operations;
- Operating time: the making time of the contacts in a contactor can not overlap the arcing time of the contacts in another contactor;
- The other technical data are same as those of 3TF, for example 3TD40, see 3TF40;
- Parameters and order specifications.

订货号 Order No.	每台接触器辅助触头 Auxi. contact no. per contactor		额定工作电流 Rated operational current I_e	可控电机功率 Rated outputs of three-phase motors AC-3					相配热过载继电器型号	熔断器规格 Fuses Condination type	
	NO	NC	at AC-3, 400/380V A	230/220V KW	400/380V KW	500V KW	690/660V KW	1000V KW	Overload Relay Type	“1” A	”2” A
3TD40 02 - 0X ..	2	2	9	2.4	4	5.5	5.5	-	3UA50	35	25
3TD40 02 - 0X .. - Z1	2	2									
3TD40 01 - 0X .. - Z1	1	1									
3TD40 00 - 0X .. - Z1	-	1									
3TD41 02 - 0X ..	2	2	12	3.3	5.5	7.5	7.5	-		35	25
3TD41 02 - 0X .. - Z1	2	2									
3TD41 01 - 0X .. - Z1	1	1									
3TD41 00 - 0X .. - Z1	-	1									
3TD42 02 - 0X ..	2	2	16	4	7.5	9	11	-	3UA52	65	35
3TD42 02 - 0X .. - Z1	2	2									
3TD43 02 - 0X ..	2	2	22	5.5	11	11	11	-		65	35
3TD43 02 - 0X .. - Z1	2	2									
3TD44 02 - 0X ..	2	2	32	8.5	15	21	23	-	3UA55	80	63
3TD44 02 - 0X .. - Z1	2	2									
3TD45 02 - 0X ..	2	2	38	11	18.5	25	23	-		80	63
3TD45 02 - 0X .. - Z1	2	2									
3TD46 02 - 0X ..	2	2	45	15	22	30	39	-	3UA58	160	100
3TD47 02 - 0X ..	2	2	63	18.5	30	41	55	-		160	125
3TD48 02 - 0X ..	2	2	75	22	37	50	67	39		250	160
3TD50 02 - 0X ..	2	2	110	37	55	76	100	55	3UA60	315	250
3TD52 02 - 0X ..	2	2	170	55	90	118	156	90	3AU62	355	250
3TD54 02 - 0X ..	2	2	250	78	132	178	235	132	3UA66	500	315
3TD56 02 - 0X ..	2	2	400	125	200	284	375	150		800	500

注：1）3TD40-3TD50 仅在满足以下条件时才可使用 50Hz 与 60Hz 通用线圈电压：控制电机正反方向旋转的两个控制信号的输出至少存在 50ms 的时间间隔。
The coil for AC 50/60 Hz for 3TD40 to 3TD50 contactor combinations should be used only if it is ensured that between the signal output for both directions of rotation minimum dead interval on reversing of 50ms exists.

2）上表中熔断器的选用是根据 IEC947-4
“ 1 ” 型配合保护－允许接触器及热继电器遭受损坏
“ 2 ” 型配合保护－热继电器不受损坏，接触器触头允许熔焊(如果触头容易分离)
Selection of the fuses in the above table is in accordance with excerpt from IEC947 - 4.
Type of co-ordination “1”:
Destruction of contactor and overload relay is admissible. Contactor and/or overload relay must be replaced, if necessary.
Type of co-ordination “2”:
No damage can be tolerated on the overload relay, but contact welding on the contactor is permitted, if the contacts can easily be separated.

导线截面积(接线螺钉) Conductor cross-section (screw terminal)

1. 主回路导线。
a) 实心 / 绞合线。
b) 带端套或不带端套的细绞合线。
c) 细绞线, 带叉形接线端头绞合线。
d) 带叉形接线端头绞合线。
e) 联接板。
f) 剥去绝缘层长度。
g) 接线螺钉。
h) 紧固力钜。
i) AWG 制导线。

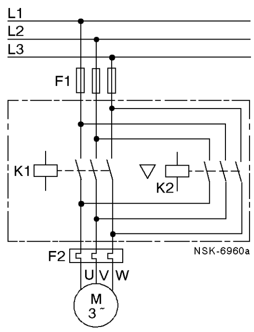
2. 辅助回路导线。
a) 实心。
b) 带端套的细绞合线。
c) 接线螺钉。
d) 紧固力钜。
e) AWG 制导线。

1. Main conductors
a) solid/stranded
b) finely stranded with and without end sleeve
c) finely stranded with cable lug
d) stranded with cable lug
e) connecting bars
f) stripped length
g) terminal screws
h) tightening torque
i) AWG wires

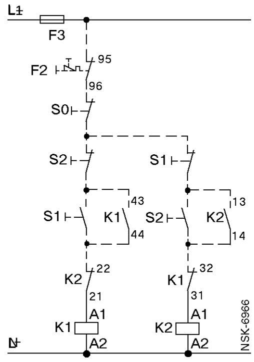
2. Auxiliary conductors
a) solid
b) finely stranded with end sleeve
c) terminal screws
d) tightening torque
e) AWG wires

	1.a) mm²	1.b) mm²	1.c) mm²	1.d) mm²	1.e) mm²	1.f) mm	1.g)	1.h) Nm/lb.in	1.i) AWG	2.a) mm²	2.b) mm²	2.c)	2.d) Nm/lbin	2.e) AWG
3TD40 3TD41	1~2.5 1 × 4	0.75~2.5	-	-		10	M3.5	0.8~1, 4/7~12	18~12	0.5~2.5	0.75~2.5	M3.5	0.8~1, 4/7~12	18~14
3TD42 3TD43	2.5~6	1.5~4	-	-	-	12	M4	1~1.5/9~13	14~10	0.5~2.5	0.75~2.5	M3.5	0.8~1, 4/7~12	18~14
3TD44 3TD45	2.5~25	2.5~16		-	-	10	M5	2.5~3/22~26.5	14~6					
3TD46 3TD47 3TD48	6~35	4~25	-	-	-	16^{+3}	-	3~4						
3TD50	25~70	25~50	-	-	-	22^{+3}	-	4~5						
3TD52	-	-	35~95	50~120	20 × 3	-	M8	10~14						
3TD54	-	-	50~240	70~240	25 × 5	-	M10	14~16.5						
3TD56	-	-	50~240	70~240	2 ×(25 × 5)	-	M10	14~16.5						

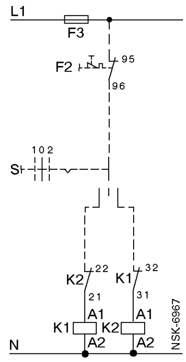
电路图 | Circuit diagrams



主回路
Power circuit



瞬时通电的操作电路
Control circuit for momentary-contact control



保持通电的操作电路
Control circuit for maintained-contact control

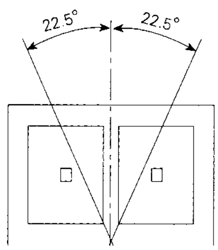
S0 “ 断开 ” 按钮。
S1 “ 接通顺时针方式 ” 按钮。
S2 “ 接通逆时针方式 ” 按钮。
S “ 顺时针－断开－逆时针方式 ” 选择开关。

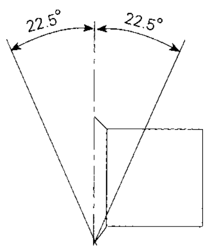
K1 控制顺转的接触器。
K2 控制逆转的接触器。
F1 主回路熔断器。
F2 过载继电器。
F3 控制回路熔断器。

S0 ”Off” button
S1 ”On-clockwise” button
S2 ”On-anti-clockwise” button
S ”clockwise-Off-anti-clockwise” selector switch

K1 Contactor for clockwise rotation
K2 Contactor for anti-clockwise rotation
F1 Fuse for power circuit
F2 Overload relay
F3 Fuse for control circuit

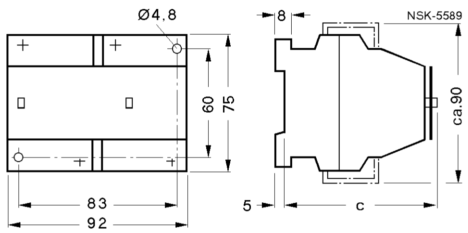
允许安装位置 | Permissible mounting position



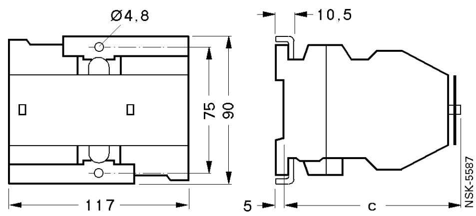


外型及安装尺寸 Dimension drawings

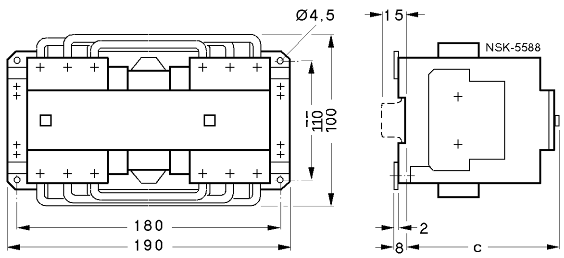
1. 3TD40, 3TD41 c=97mm/81mm



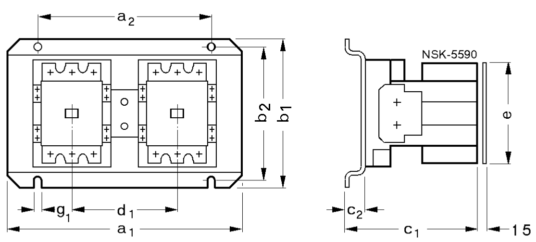
2. 3TD42, 3TD43 c=107mm



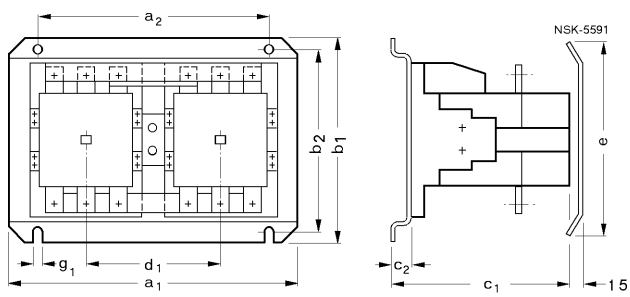
3. 3TD44, 3TD45 c=102mm



4. 3TD46 - 3TD48



5. 3TD50 - 3TD56



	a1	a2	b1	b2	b4	c1	c2	d1	e	g1
3TD46	240	180	165	145	-	141	18	117	150	7(M6)
3TD47	240	180	165	145	-	141	18	117	150	7(M6)
3TD48	260	200	175	155	-	158	18	127	160	7(M6)
3TD50	300	240	210	185	260	168	18	147	-	9(M8)
3TD52	330	270	240	215	315	203	18	162	-	9(M8)
3TD54	350	290	265	240	375	219	21	172	-	11(M10)
3TD56	380	310	265	240	385	243	21	187	-	11(M10)





3UA	页号 Page

3RB 12	页号 Page
电子式热继电器 Solid state overload relays	

CLASS 5 to CLASS 30



3RN10	页号 Page
3RN10 热敏马达保护装置 3RN10 Thermistor motor protection	

详情请洽西门子办事处
Details please contact Siemens Office

说明 Description

3UA 系列热过载继电器适用于交流 50Hz / 60Hz，电压 690V - 1000V，电流 0.1 - 400A 的长期工作或间断长期工作的一般交流电动机的过载与断相保护，也可用作直流电磁铁和直流电动机的过载保护。

继电器具有断相保护，温度补偿，脱扣指示功能，并能自动与手动复位，动作可靠，符合 IEC947 - 4, VDE0660, GB14048 等标准。

继电器可与接触器接插安装，也可独立安装。

3UA Series Overload Relays are suitable for overload and phase - failure protection of AC motors with frequency of 50/60Hz, voltage up to 690 ~ 1000V, current up to 0.1 ~ 400A under 8 - hours duty or uninterrupted duty. The relays are also suitable for overload protection of DC magnet and DC motors.

The relays comply with IEC947-4, VDE0660 and GB14048. Several functions provided by these relays are: phase-failure protection, temperature compensation, ON/OFF indication and manual/automatic reset. The relays can be mounted onto contactors or installed as single units.

工作条件 Operating Conditions

- 海拔高度不超过 2000 米；
- 周围环境温度：-25~+55ºC
- 空气相对湿度：+25ºC 时不超过 90%;

- The altitude of the site of installation does not exceed 2000 meters above sea levels.
- The ambient air temperature: -25 ~ +55ºC
- Relative humidity does not exceed 90% at +25ºC

结构特点 Features

- 3UA 系列为双金属片式热过载继电器，脱扣等级为 10A;
- 具有差动式断相保护；
- 具有整定电流连续可调装置；
- 具有温度补偿；
- 具有脱扣指示；
- 具有测试按钮；
- 具有手动复位和自动复位按钮；
- 具有在电气上相互绝缘的一常开和一常闭触头；
- SIGUT- 西门子专利端接法，接线方便、牢固，接触可靠性高，抗振性强，安全防护性好；
- 安装方式：与接触器接插安装或独立安装。

- 3UA series are bimetal thermal relays with release class 10A.
- With differential phase- failure protection
- With continuous current adjusting scale
- With temperature compensation
- With ON/OFF indicator
- With TEST(OFF) button
- With Manual/Auto reset button
- With Auxiliary contacts 1 NO +1 NC insulated each other
- SIGUT - Siemens patent terminal, ensures easy and reliable connection, strong shock resistance and perfect safety protection.
- Mounting: plug in connection with contactor or install as a single unit.

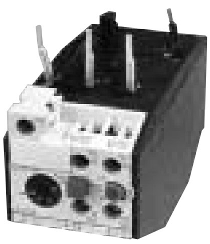
选型与订货数据 Selection and ordering data

3UA50	订货号 Order No.	整定电流范围(A) Setting range	熔断器规格(A) Fuse links IEC947 - 4 “1”	”2”	相配接触器型号 For contactor	重量 Weight kg
	3UA50 40 - 0A	0.1 - 0.16	35	0.5	3TF30	0.14
	3UA50 40 - 0C	0.16 - 0.25	35	1	3TF31	
	3UA50 40 - 0E	0.25 - 0.4	35	1.6	3TF40	
	3UA50 40 - 0G	0.4 - 0.63	35	2	3TF41	0.14
	3UA50 40 - 0J	0.63 - 1	35	4	3TD40[1)]	
	3UA50 40 - 0K	0.8 - 1.25	35	4	3TD40[1)]	0.14
	3UA50 40 - 1A	1 - 1.6	35	6	3TE40	
	3UA50 40 - 1B	1.25 - 2	35	6	3TB40	
	3UA50 40 - 1C	1.6 - 2.5	35	6	3TB41	0.14
	3UA50 40 - 1D	2 - 3.2	35	10		
	3UA50 40 - 1E	2.5 - 4	35	10		
	3UA50 40 - 1F	3.2 - 5	35	16		0.14
	3UA50 40 - 1G	4 - 6.3	35	16		
	3UA50 40 - 1H	5 - 8	35	20		
	3UA50 40 - 1J	6.3 - 10	35	25		0.14
	3UA50 40 - 1K	8 - 12.5	35	25		
	3UA50 40 - 2S	10 - 14.5	35	25		

1) 仅作为具有单独接线的独立单元安装 / Installing as a single unit with individual wiring only.
2) 使用 3UX1210 连接带与 3TF53 接触器连接 / use 3UX1210 links for connection to 3TF53 contactors.

选型与订货数据 Selection and ordering data

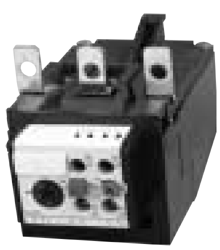
3UA52	订货号 Order No.	整定电流 范围(A) Setting range	熔断器规格(A) Fuse links IEC947 - 4 “1”	”2”	相配的接触器型号 For contactor	重量 Weight kg
	3UA52 40 - 0A	0.1 - 0.16	63	0.5	3TF32 3TF33 3TF42 3TF43 3TD42[1)] 3TD43[1)] 3TE42 3TB42 3TB43	0.14
	3UA52 40 - 0C	0.16 - 0.25	63	1		
	3UA52 40 - 0E	0.25 - 0.4	63	1.6		
	3UA52 40 - 0G	0.4 - 0.63	63	2		0.14
	3UA52 40 - 0J	0.63 - 1	63	4		
	3UA52 40 - 0K	0.8 - 1.25	63	4		
	3UA52 40 - 1A	1 - 1.6	63	6		0.14
	3UA52 40 - 1B	1.25 - 2	63	6		
	3UA52 40 - 1C	1.6 - 2.5	63	6		
	3UA52 40 - 1D	2 - 3.2	63	10		0.14
	3UA52 40 - 1E	2.5 - 4	63	10		
	3UA52 40 - 1F	3.2 - 5	63	16		
	3UA52 40 - 1G	4 - 6.3	63	16		0.14
	3UA52 40 - 1H	5 - 8	63	20		
	3UA52 40 - 1J	6.3 - 10	63	25		
	3UA52 40 - 1K	8 - 12.5	63	25		0.14
	3UA52 40 - 2A	10 - 16	63	35		
	3UA52 40 - 2B	12.5 - 20	63	35		
	3UA52 40 - 2C	16 - 25	63	50		

3UA54	订货号 Order No.	整定电流 范围(A) Setting range	熔断器规格(A) Fuse links IEC947 - 4 “1”	”2”	相配的接触器型号 For contactor	重量 Weight kg
	3UA54 40 - 1G	4 - 6.3	100	16	3TB44	0.20
	3UA54 40 - 1J	6.3 - 10	100	25		
	3UA54 40 - 2A	10 - 16	100	35		
	3UA54 40 - 2B	12.5 - 20	100	50		0.20
	3UA54 40 - 2C	16 - 25	100	50		
	3UA54 40 - 2D	20 - 32	100	80		
	3UA54 40 - 2Q	25 - 36	100	80		

1) 仅作为具有单独接线的独立单元安装 / Installing as a single unit with individual wiring only

选型与订货数据 Selection and ordering data

3UA55	订货号 Order No.	整定电流 范围(A) Setting range	熔断器规格(A) Fuse links IEC947 - 4		相配的接触器型号 For contactor	重量 Weight kg
			“1”	”2”		
	3UA55 40 - 1A	1 - 1.6	100	6	3TF34	
	3UA55 40 - 1B	1.25 - 2	100	6	3TF35	0.20
	3UA55 40 - 1C	1.6 - 2.5	100	6	3TF44	
	3UA55 40 - 1D	2 - 3.2	100	10	3TF45	
	3UA55 40 - 1E	2.5 - 4	100	10	3TD44[1]	0.20
	3UA55 40 - 1F	3.2 - 5	100	16	3TD45[1]	
	3UA55 40 - 1G	4 - 6.3	100	16	3TE44	
	3UA55 40 - 1H	5 - 8	100	20		0.20
	3UA55 40 - 1J	6.3 - 10	100	25		
	3UA55 40 - 1K	8 - 12.5	100	25		
	3UA55 40 - 2A	10 - 16	100	35		0.20
	3UA55 40 - 2B	12.5 - 20	100	50		
	3UA55 40 - 2C	16 - 25	100	50		
	3UA55 40 - 2D	20 - 32	100	80		0.20
	3UA55 40 - 2Q	25 - 36	100	80		
	3UA55 40 - 2R	32 - 40	100	80		0.20
	3UA55 40 - 8M	36 - 45	100	80		

3UA58	订货号 Order No.	整定电流 范围(A) Setting range	熔断器规格(A) Fuse links IEC947 - 4		相配的接触器型号 For contactor	重量 Weight kg
			“1”	”2”		
	3UA58 40 - 2B	12.5 - 20	160	50	3TF46	0.4
	3UA58 40 - 2C	16 - 25	160	50	3TF47	
	3UA58 40 - 2D	20 - 32	160	63	3TF48	
	3UA58 40 - 2E	25 - 40	160	80	3TF49	
	3UA58 40 - 2F	32 - 50	160	100	3TD46[1]	0.4
	3UA58 40 - 2T	40 - 57	160	100	3TD47[1]	
	3UA58 40 - 2P	50 - 63	160	100	3TD48[1]	
	3UA58 40 - 2V	57 - 70	160	125	3TE46	0.4
	3UA58 40 - 2U	63 - 80	250	160	3TE47	
	3UA58 40 - 8W	70 - 88	250	160	3TE48	

[1]) 仅作为具有单独接线的独立单元安装 / Installing as a single unit with individual wiring only

选型与订货数据 — Selection and ordering data

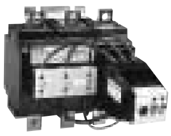
3UA60	订货号 Order No.	整定电流 范围(A) Setting range	熔断器规格(A) Fuse links IEC947 - 4 “1”	熔断器规格(A) Fuse links IEC947 - 4 ”2”	相配的接触器型号 For contactor	重量 Weight kg
	3UA60 40 - 2H	55 - 80	250	160	3TE48[1)] 3TF49[1)] 3TF50 3TE50 3TD50[1)] 3TB50	0.7
	3UA60 40 - 2W	63 - 90	250	160		
	3UA60 40 - 2X	80 - 110	315	200		
	3UA60 40 - 3H	90 - 120	315	224		0.7
	3UA60 40 - 3J	110 - 135	315	224		

3UA61	订货号 Order No.	整定电流 范围(A) Setting range	熔断器规格(A) Fuse links IEC947 - 4 “1”	熔断器规格(A) Fuse links IEC947 - 4 ”2”	相配的接触器型号 For contactor	重量 Weight kg
	3UA61 40 - 2H	55 - 80	250	160	3TF51	0.7
	3UA61 40 - 2W	63 - 90	250	160		
	3UA61 40 - 2X	80 - 110	315	200		
	3UA61 40 - 3H	90 - 120	315	224		0.7
	3UA61 40 - 3J	110 - 135	315	224		
	3UA61 40 - 3K	120 - 150	315	224		

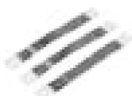
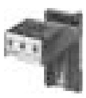
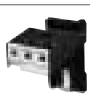
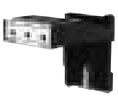
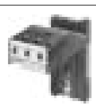
3UA59	订货号 Order No.	整定电流 范围(A) Setting range	熔断器规格(A) Fuse links IEC947 - 4 “1”	熔断器规格(A) Fuse links IEC947 - 4 ”2”	相配的接触器型号 For contactor	重量 Weight kg
	3UA59 40 - 0A	0.1 - 0.16	25	0.5	单独安装使用 mounting seperatly	0.28
	3UA59 40 - 0C	0.16 - 0.25	25	1		
	3UA59 40 - 0E	0.25 - 0.4	25	1.6		
	3UA59 40 - 0G	0.4 - 0.63	25	2		0.28
	3UA59 40 - 0J	0.63 - 1	25	4		
	3UA59 40 - 0K	0.8 - 1.25	25	4		
	3UA59 40 - 1A	1 - 1.6	25	6		0.28
	3UA59 40 - 1B	1.25 - 2	25	6		
	3UA59 40 - 1C	1.6 - 2.5	25	6		
	3UA59 40 - 1D	2 - 3.2	25	10		0.28
	3UA59 40 - 1E	2.5 - 4	25	10		
	3UA59 40 - 1F	3.2 - 5	25	16		
	3UA59 40 - 1G	4 - 6.3	25	16		0.28
	3UA59 40 - 1H	5 - 8	25	16		
	3UA59 40 - 1J	6.3 - 10	25	16		
	3UA59 40 - 1K	8 - 12.5	35	25		0.28
	3UA59 40 - 2A	10 - 16	63	35		
	3UA59 40 - 2B	12.5 - 20	63	50		
	3UA59 40 - 2C	16 - 25	63	50		0.28
	3UA59 40 - 2D	20 - 32	80	63		
	3UA59 40 - 2E	25 - 40	125	80		
	3UA59 40 - 2M	32 - 45	160	100		0.28
	3UA59 40 - 2T	40 - 57	160	125		
	3UA59 40 - 2P	50 - 63	160	125		

选型与订货数据 Selection and ordering data

3UA62	订货号 Order No.	整定电流 范围(A) Setting range	熔断器规格(A) Fuse links IEC947 - 4 “1”	”2”	相配的接触器型号 For contactor	重量 Weight kg
	3UA62 40 - 2H 3UA62 40 - 2W 3UA62 40 - 2X	55 - 80 63 - 90 80 - 110	250 250 315	160 160 200	3TF52 3TE52 3TD52[1] 3TF53[2] 3TB52	0.7
	3UA62 40 - 3H 3UA62 40 - 3J 3UA62 40 - 3K	90 - 120 110 - 135 120 - 150	315 315 315	224 224 224		0.7
	3UA62 40 - 3L 3UA62 40 - 3M	135 - 160 150 - 180	355 355	224 224		0.7

3UA66	订货号 Order No.	整定电流 范围(A) Setting range	熔断器规格(A) Fuse links IEC947 - 4 “1”	”2”	相配的接触器型号 For contactor	重量 Weight kg
	3UA66 40 - 2K 3UA66 40 - 3B 3UA66 40 - 3C	80 - 125 125 - 200 160 - 250	500 500 500	250 315 400		2.5
	3UA66 40 - 3D 3UA66 40 - 3E	200 - 320 250 - 400	500 800	400 500		2.5

附件说明 Accessories

	名称 Name	订货号 Order No.	用途 Application	重量 Weight kg
	软轴式复位线 Cable release	3UX1015 3UX1016	用于热继电器的远距离复位操作 3UX1015 长 400mm 3UX1016 长 600mm For resetting relays at a long distance	0.07
	防护附件 Sealable cap	3UX1110 3UX1111	用于锁定设置旋钮和测试按钮 For covering setting knob and OFF button	0.01
	连接排 (一套三根) Links (1set=3items)	3UX1221	用于 3UA61、3UA62 (135~160A, 150~180A) 与 3TF51、3TF52、3TB52 接触器的连接 For connection of 3UA61, 3UA62 (135~160A, 150~180A) with 3TF51, 3TF52, 3TB52 contactors	0.085
		3UX1210	用于 3UA62、3UA66 (至 200A)与 3TF53、3TF54、3TB54、3TD54、3TE54 接触器的连接 For connection of 3UA62, 3UA66 (to 200A) with 3TF53, 3TF54, 3TB54, 3TD54, 3TE54 contactors	0.1
		3UX1211	用于 3UA66 (至 400A)与 3TF54、3TB54、3TD54、3TE54、3TF55、3TF56、3TB56 接触器的连接 For connection of 3UA66 (to 400A) with 3TF54, 3TB54, 3TD54, 3TE54, 3TF55, 3TF56, 3TB56 contactors	0.33
	连接支座 Relay base	3UX1418	与 3UA50 配合组成独立安装产品 For installing 3UA50 as a single unit	0.05
	连接支座 Relay base	3UX1420	与 3UA52, 3UA54 配合组成独立安装产品 For installing 3UA52, 3UA54 as a single unit	0.05
	连接支座 Relay base	3UX1421	与 3UA58 配合组成独立安装产品 For installing 3UA58 as a single unit	0.05
	连接支座 Relay base	3UX1425	与 3UA55 配合组成独立安装产品 For installing 3UA55 as a single unit	0.05
	接线端子盒 Box terminal block	3UX1424	与 3UA60 配合组成独立安装产品 For installing 3UA60 as a single unit	0.2

[1]) 仅作为具有单独接线的独立单元安装 / Installing as a single unit with individual wiring only
[2]) 使用 3UX1210 连接带与 3TF53 接触器连接 / Use 3UX1210 links for connection to 3TF53 contactors

技术数据 Technical data

	3UA50 3UA52	3UA54 3UA55	3UA59	3UA58	3UA60	3UA61	3UA62	3UA66
额定工作电流(A) Rated operational current	14.5 25	36 45	63	88	135	150	180	400
额定绝缘电压(V) Rated insulation voltage	690	690	690	1000	1000	1000	1000	1000
额定工作电压(V) Rated operational voltage	690	690	690	1000	1000	1000	1000	1000
电流类型及频率 Type of current, frequency	直流；交流至 400Hz DC; AC up to 400Hz							交流 50~400Hz AC 50 to 400Hz
环境温度(ºC) Ambient temperature	-25~+55	-25~+55	-25~+55	-25~+55	-25~+55	-25~+55	-25~+55	-25~+55
断相保护 Phase - failure protection	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes
手动与自动复位 Manual/Auto reset	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes
温度补偿(-25~+55ºC) Temperature compensation	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes
脱扣指示 Switch position indicator	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes
测试按钮 Test button	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes	有 Yes
连接接触器线圈接线端子 Terminal for contactor coil	有 Yes	有 Yes	无 No	无 No	无 No	无 No	无 No	无 No
辅助触头 Auxiliary contacts	1 常开 +1 常闭 1NO+1NC	1 常开 +1 常闭 1NO+1NC	1 常开 +1 常闭 1NO+1NC	1 常开 +1 常闭 1NO+1NC	1 常开 +1 常闭 1NO+1NC	1 常开 +1 常闭 1NO+1NC	1 常开 +1 常闭 1NO+1NC	1 常开 +1 常闭 1NO+1NC
通断能力(380V) AC - 15 Switching capacity	1.1A	1.1A	1.1A	1.1A	1.1A	1.1A	1.1A	1.1A
安装方式 Mounting	接插式 Plug - in	接插式 Plug - in	独立式 as a single unit	接插式 Plug - in	独立式 as a single unit	独立式 as a single unit	独立式 as a single unit	独立式 as a single unit
导线截面积(mm²) Conductor cross-section (mm²) / 主回路 Main circuit / 单芯或绞合线 Solid or stranded conductor	2.5~6	1.5~25	1.5~25	2.5~35	25~70	50~120	50~120	≤ 200A 185 > 200A 240
主回路 Main circuit / 细绞线带端子套管 Finely stranded conductor with end sleeve	1.5~4	1~16	1~16	1.5~25	25~50	25~95 铜排 20 × 3 Flat bars	25~95 铜排 20 × 3 Flat bars	铜排 20 × 3/ 2 × 30 × 5 Flat bars
主回路 Main circuit / 接线螺钉 Terminal screw	M4	M5	M5	M5	M6	M8	M8	M8/M10
辅助回路 Auxiliary circuit / 单芯或绞合线 Single core or stranded conductor	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)
辅助回路 Auxiliary circuit / 细绞线带端子套管 Finely stranded conductor with end sleeve	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)	2 × (0.5~1)
辅助回路 Auxiliary circuit / 接线螺钉 Terminal screw	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5

保护特性 Protection characteristics

项目 Item No.	整定电流倍数 Times the setting current	动作时间 Release time	试验条件 Test condition
1	1.05	>2 小时 >2h [1])	冷态 Cold state
2	1.20	<2 小时 <2h [1])	热态 Hot state
3	1.50	<2 分钟 <2min [1])	以 1 倍整定电流预热 2 小时 pre - heated for 2 hours with 1 time setting current
4	7.2	2s<Tp ≤ 10s, 10A 级 / Class 10A	冷态 Cold state
	热态即指继电器以项 1 电流加热至稳定状态。 Hot state means heat the overload relay into steady state with the current as shown in “Item 1.”		

项目 Item No.	整定电流倍数 Times the setting current 任意二相 Any two phases	整定电流倍数 Times the setting current 另一相 Another phase	动作时间 Release time	试验条件 Test condition
5	1.0	0.9	>2 小时 >2h [2])	冷态 Cold state
6	1.15	0	<2 小时 <2h [2])	热态 Hot state
	热态即指继电器以项 1 电流加热至稳定状态。 Hot state means heat the overload relay into steady state with the current as shown in “Item 1.”			

[1]) 在环境温度为 +20ºC 和三相负载平衡时的动作时间 / Release time with 3-pole symmetrical load at ambient termperature +20ºC

[2]) 在环境温度为 +20ºC 和三相负载不平衡(断相)时的动作时间 / Release time with 3-pole unsymmetrical load (phase-failure) at ambient termperature +20ºC

技术数据 Technical data

3.冷态开始三相均衡负载的脱扣时间(参考数据) 3.Release time with 3-pole symmetrical load form the cold state (as reference)

整定电流范围 Setting range (A)	连接导线截面积 Conductor corss-sections (mm^2)	整定电流倍数($\times I_e$) Times the setting current					
		3	4	5	6	7	8
3UA50, 3UA52					脱扣时间：秒 Release time: (in sec.)		
0.1-0.16	1	16.7	10.3	7.5	5.9	4.8	4.1
0.16-0.25	1	20.5	12.8	9.5	7.5	6.3	5.4
0.25	1	18	11.2	8.2	6.5	5.4	4.6
0.4-0.63	1	20.8	12.8	9.5	7.6	6.3	5.4
0.63-1	1	23.3	14.4	10.5	8.3	6.8	5.8
0.8-1.25	1	28	17.5	12.7	9.8	8.1	6.8
1-1.6	1	22.6	14.3	10.4	8.3	6.8	5.9
1.25-2	1	22.3	14	10.3	8.4	6.9	6.0
1.6-2.5	1	24.5	15.5	11.5	9	7.5	6.4
2-3.2	1	23.8	15	11	8.8	7.3	6.3
2.5-4	1	24.4	15.6	11.4	9.1	7.6	6.5
3.2-5	1	27.5	17	12.2	9.5	7.8	6.5
4-6.3	1	23.4	14.4	10.4	8	6.5	5.5
5-8	1	22.5	13.5	9.5	7.2	5.7	4.7
6.3-10	1.5	24	13.9	9.3	6.8	5.3	4.3
8-12.5	2.5	24.5	14.8	10.2	7.8	6.2	5.2
10-14.5	2.5	23.2	13.9	9.5	7.2	5.6	4.6
10-16	2.5	23.2	13.9	9.5	7.2	5.6	4.6
12.5-20	2.5	23	13	8.6	6.3	4.8	3.9
16-25	4	31	17	11	7.7	5.8	4.6
3UA54					脱扣时间：秒 Release time: (in sec.)		
4-6.3	1	23.4	14.4	10.4	8	6.5	5.5
6.3-10	1.5	24	13.9	9.3	6.8	5.3	4.3
10-16	2.5	26.2	15.8	10.8	8.1	6.4	5.2
12.5-20	2.5	26.6	14.8	9.7	7.0	5.3	4.3
16-25	4	29	15.4	9.8	7.0	5.3	4.2
20-32	6	28	16.1	10.8	8.2	6.3	5.2
25-36	10	33.4	19	12.8	9.3	7.2	5.8
3UA55					脱扣时间：秒 Release time: (in sec.)		
1-1.6	1	22.6	14.3	10.4	8.3	6.8	5.9
1.25-2	1	22.3	14	10.3	8.4	6.9	6
1.6-2.5	1	24.5	15.5	11.5	9	7.5	6.4
2-3.2	1	23.8	15	11	8.3	7.3	6.3
2.5-4	1	24.4	15.5	11.4	9.1	7.6	6.5
3.2-5	1	27.5	17	12.2	9.5	7.8	6.5
4-6.3	1	25.4	14.4	10.4	8	6.5	5.5
5-8	1	22.5	13.5	9.5	7.2	5.7	4.7
6.3-10	1.5	24	13.9	9.3	6.8	5.3	4.3
8-12.5	2.5	24.5	14.8	10.2	7.8	6.2	5.2
10-16	2.5	26.2	15.8	10.8	8.1	6.4	5.2
12.5-20	2.5	26.6	14.8	9.7	7	5.3	4.3
16-25	4	29	15.4	9.8	7	15.3	4.2
20-32	6	28	16.1	10.8	8.2	6.3	5.2
25-36	10	33.4	19	12.8	9.3	7.2	5.8
32-40	10	24.3	13.6	8.8	6.6	5	4.2
36-45	10	23	13	8.5	6.2	4.5	3.3

技术数据							Technical data
整定电流范围 Setting range (A)	连接导线截面积 Conductor corss-sections (mm^2)	整定电流倍数(× I_e) Times the setting current					
		3	4	5	6	7	8
3UA58					脱扣时间：秒 Release time: (in sec.)		
16-25	4	34	19.5	13.2	9.7	7.6	6.2
20-32	6	33	18.5	12.8	9.4	7.4	6
25-40	10	30	17	11.5	8.4	6.5	5.3
32-50	10	29	16.6	11	8	6.2	5
40-57	16	35	19.4	12.3	8.7	6.6	5.3
50-63	16	37	20.5	13.3	9.6	7.3	5.8
57-70	25	40	21.5	14	9.8	7.4	5.8
63-80	25	40	21.5	13.8	9.7	7.3	5.8
70-88	35	33.9	17.6	11.8	8	6.5	4.9
3UA59					脱扣时间：秒 Release time: (in sec.)		
0.1-0.16	1	16.7	10.3	7.5	5.9	4.8	4.1
0.16-0.25	1	20.5	12.8	9.5	7.5	6.3	5.4
0.25-0.4	1	18	11.2	8.2	6.5	5.4	4.6
0.4-0.63	1	20.8	12.8	9.5	7.6	6.3	5.4
0.63-1	1	23.3	14.4	10.5	8.3	6.8	5.8
0.8-1.25	1	28	17.5	12.7	9.8	8.1	6.8
1-1.6	1	22.6	14.3	10.4	8.3	6.8	5.9
1.25-2	1	22.3	14	10.3	8.4	6.9	6.0
1.6-2.5	1	24.5	15.5	11.5	9	7.5	6.4
2-3.2	1	23.8	15	11	8.8	7.3	6.3
2.5-4	1	24.4	15.6	11.4	9.1	7.6	6.5
3.2-5	1	27.5	17	12.2	9.5	7.8	6.5
4-6.3	1	23.4	14.4	10.4	8	6.5	5.5
5-8	1	22.5	13.5	9.5	7.2	5.7	4.7
6.3-10	1.5	24	13.9	9.3	6.8	5.3	4.3
8-12.5	2.5	31	17	11	7.7	5.8	4.6
10-16	2.5	16.1	9.5	6.6	5.1	3.9	3.3
12.5-20	2.5	17.3	10.1	7	5.2	4.2	3.4
16-25	4	16.7	9.8	6.7	5.1	3.9	3.2
20-32	6	17.5	10	6.8	5.1	4	3.3
25-40	10	17.3	10.1	7	5.2	4.2	3.4
32-45	10	16.7	9.8	6.7	5.1	3.9	3.2
40-57	16	17.5	10	6.8	5.1	4	3.3
50-63	16	17	9.7	6.7	5.1	4	3.3
3UA60, 3UA61, 3UA62					脱扣时间：秒 Release time: (in sec.)		
55-80	25	36	21	13.5	9.8	7.5	6.1
63-90	35	44	24	15.5	11	8.5	6.7
80-110	35	43	22	14	10	7.7	6.1
90-120	50	40	21.8	14	10	7.5	5.9
110-135	50	32	18	11.7	8.4	6.4	5.1
120-150	50	35	19.5	12.8	9.4	7.2	5.8
135-160	70	38	20.6	13.8	10	7.6	6.2
150-180	95	37	20.5	13.5	9.7	7.4	6.0
3UA66					脱扣时间：秒 Release time: (in sec.)		
80-125	50	25	16.8	13.1	11.1	9.9	9.1
125-200	95	24.4	16.1	11.9	9.8	8.4	7.4
160-250	120	23.8	13.9	10.3	8.5	7.3	6.5
200-320	185	25.6	15.5	10.9	8.5	7	6.4
250-400	240	25	15	10.5	8.5	7	6.2

脱扣特性 Tripping characteristics

此电流 - 时间曲线显示了从冷态到脱扣的时间和实际电流与整定电流的倍数之间的关系。当运行电流是 1.0 x I_E 时，脱扣时间将缩短 25% 。脱扣曲线 3 适用于 3 极负载, 脱扣曲线 2 适用于 2 极负载。对于单极负载，脱扣曲线介于 2、3 之间。对于通常的运行情况，热脱扣器的 3 个双金属片均需被加热。3UA 热继电器适用于保护带相序控制的电动机，用于保护单相或直流负载时应将三个主触头串联，此时适用于曲线 3。3 相对称负载的脱扣电流为整定电流的 105% 到 120%。

The current-time curves show the relationship between the tripping time from cold state and multiples of the set current I_E. When the relay is at operating temperature and carrying 1.0 x I_E, the tripping times are reduced to approximately 25%. Tripping curve 3 is applicable to 3-pole loads and curve 2 to 2-pole loads. For single-pole loads the tripping curves lie between curves 2 and 3. For normal operation, all 3 bimetallic strips of the overload relay must be heated, The overload relays 3UA are suitable for protecting motors with phase control. For protecting single-phase or DC-loads, therefore, all three main conducting paths must be connected in series.
Tripping curve 3 is then applicable.
The release current with a 3-pole symmetrical load is between 105% and 120% of the set current.

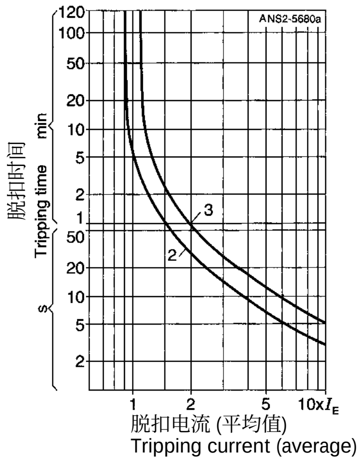
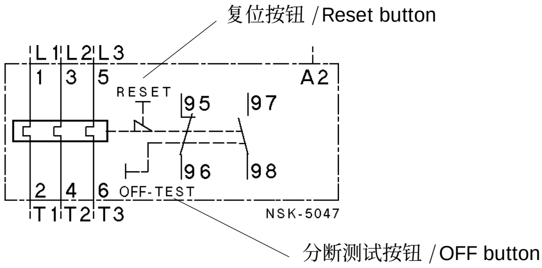


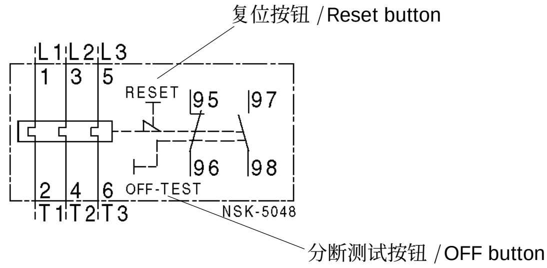
图 3/19 典型脱扣曲线
Fig. 3/19 Typical tripping characteristics

3

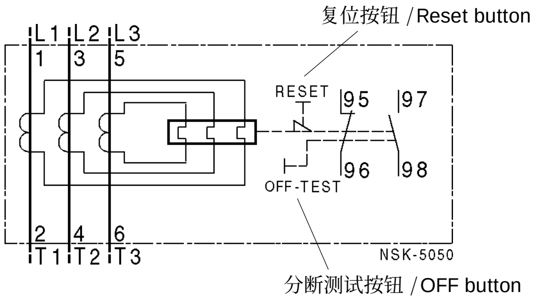
内部接线图 Internal connection diagrams



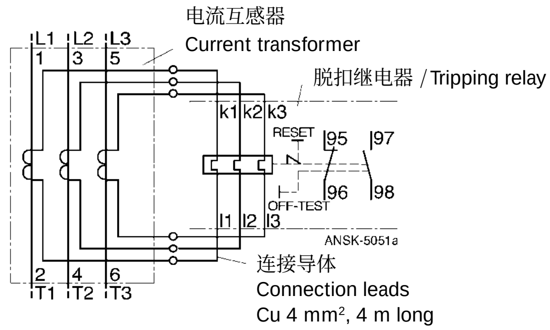
3UA50, 3UA52, 3UA54, 3UA55



3UA58, 3UA59, 3UA60, 3UA61, 3UA62



3UA66, 3UA68

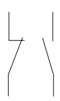


3UA66, 3UA68 的电流互感器与脱扣器分离安装
3UA66, 3UA68 separate mounting of current transformer and release relay

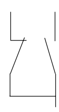
辅助触头技术参数 Technical date of auxiliary contacts

1.约定发热电流 I_{th}=6A (在 35ºC 时)
2.额定绝缘电压 U_i 的有效值

1. Conventional thermal current (at 35ºC) I_{th}=6A
2. Rated insulation voltage U_i



非等电位(NO+NC)
Unequal potential (NO+NC)
400V



等电位(NO+NC 连接成转换触头)
Equal potential (NO+NC connected as changeover contact)
690V

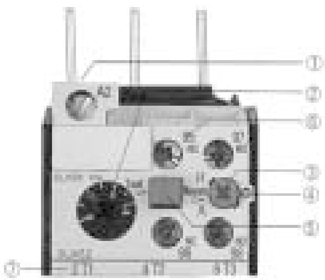
3.通断能力

3. Switching capacity

AC-15		DC-13	
U_e (V)	I_e (A)	U_e (V)	I_e (A)
24	2		
60	1.5	24	2
125	1.25	60	0.5
230	1.15	110	0.3
400	1.1	220	0.2
500	1		
690	0.8		

安装使用说明 Specification of installation

1. 3UA 热继电器面罩标识

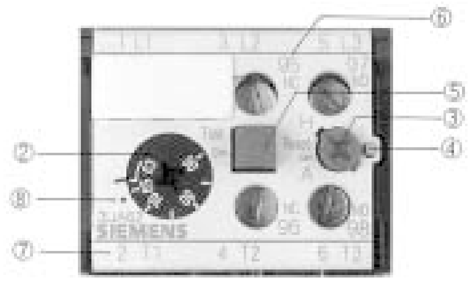


3UA50 3UA52 3UA54 3UA55 的面罩
Panel of 3UA50 3UA52 3UA54 3UA55

①接线端子 A2, (用于将接触器线圈的接线端子 A2 引出)。
②整定电流调节盘。
③复位按扭(蓝色)
H:手动复位
A:自动复位
④脱扣指示(绿色)。
当手动复位时，脱扣后指示杆顶出，在自动复位时无脱扣指示.
⑤测试按钮(红色)
⑥95、96、97、98 为辅助触头接线端子号，95、96 为常闭触头，97、98 为常开触头。
⑦主回路接线端子号，使用时必须与接触器的接线端子号相一致。
⑧3UA6 分离安装时电流设置以“ . ”标记为基准。

2. 应根据电机的额定工作电流的大小将调节盘转到相应的电流刻度。
3. 复位按钮指向”H”时为手动复位。继电器脱扣, 如要继电器重新工作, 必须手动按下复位按钮。
若在手动复位状态下配上软轴式复位线，不打开电器箱门也可实现复位(详见附件表)
如要将手动复位转成自动复位只须将复位按钮按下并逆时针方向旋转从”H”到”A” 即可。
4. 当按下测试按钮后，常开触头闭合，常闭触头打开可实现对控制回路的测试（模拟过载脱扣）。在手动复位状态，再按下蓝色复位按扭时，继电器复位；在自动复位状态，当放开此按扭后继电器即自动复位。
5. 继电器应按图所示位置按装使用。

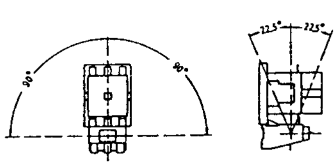
1. Marks on panel of 3UA.



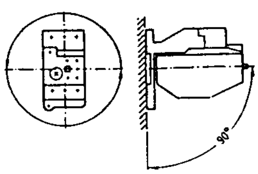
3UA58 3UA59 3AU60 3UA61 3UA62 3UA66 的面罩。
Panel of 3UA58 3UA59 3AU60 3UA61 3UA62 3UA66

① Terminal for contactor coil A2.
② Setting current adjusting scale
③ Reset button (blue)
H-manual
A-automatic
④ Switch position indicator (green)
Tripping of a manual-resetting relay is indicated by a pin projecting from the front-plate.
⑤ Test button (red)
⑥ Auxiliary contact terminals shown in 95.96.97.98.NC contacts and NO contacts are shown in positions 95.96 and 97.98 respectively.
⑦ Main circuit connection terminal No. It must correspond with terminal No. of contactor.
⑧ In case of separate mounting of 3UA6, the set current must be set on the scale against the reference mark.

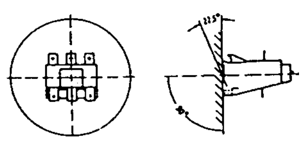
2. Set the scale to the rated current of the load.
3. If the reset button points to H (manual) and the relay has been tripped, pressing the button puts the relay in operation again.
With the door of panel closed, manual reset can be performed by means of the cable release which can be ordered (see accessories in detail).
Changing to automatic reset by pressing and turning the button anti-clock wise from H to A.
4. When the test button is actuated, the NC contact opens and the NO contact closes, therefore the auxililary circuit (simulation of overload tripping) can be tested.
In the “manual” position, the relay is resetted when the blue reset button is pressed. In the “Automatic” postion, the relay is reset automatically when the button is released.
5. Mounting and operating position, the relays are shown in drawings.



热继电器与相应 3TF、3TB 接触组合安装
Overload relays with 3TF or 3TB contactors



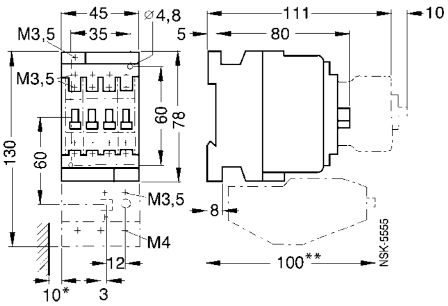
热继电器配用 3UX14 连接支座
独立安装
Overload relay with 3UX14
terminal brackets as a single unit



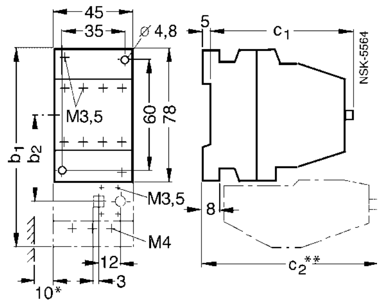
热继电器独立安装
tripping relay installed as a single unit

3

外型及安装尺寸 Dimension drawings

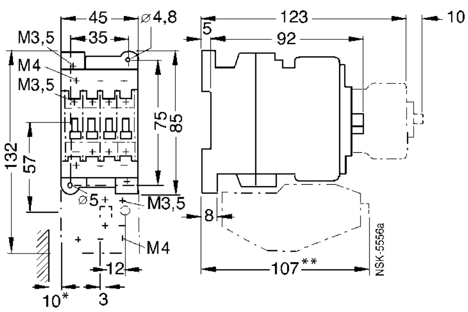


3UA50 与 3TF30/31 接触器接插安装。
3UA50+3TF30/31 contactor

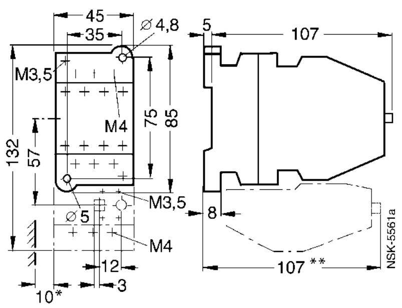


	b1	b2	c1	c2
I	125	55	80	108
II	130	60	95	100

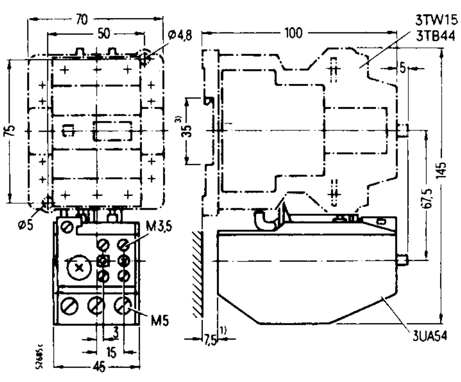
3UA50 与 3TF40/41, 3TB40/41 接触器接插安装。
(Ⅰ带有 1NO 或 1NC 辅助触头的接触器。
Ⅱ带有 1NO+1NC 或 2NO+2NC 辅助触头的接触器。)
3UA50+3TF40/41 contactor.
(Ⅰ contactor with 1NO+ or 1NC aux. Contact.
Ⅱ contactor with 1NO+NC or 2NO+NC aux. contact)



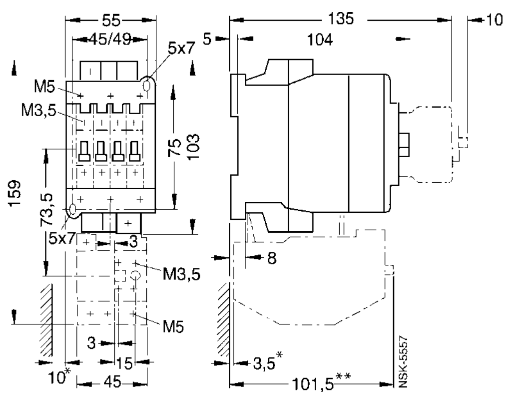
3UA52 与 3TF32/33 接触器接插安装。
3UA52+3TF32/33 contactor



3UA52 与 3TF42/43, 3TB42/43 接触器接插安装。
3UA52+3TF42/43 3TB42/43 contactor.



3UA54 与 3TB44 接触器接插安装。
3UA54+3TB44 contactor

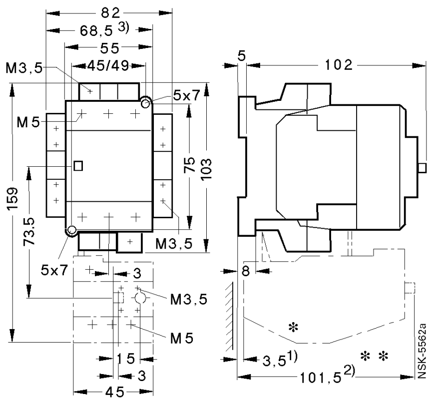


3UA55 与 3TF34/35 接触器接插安装。
3UA55+3TF34/35 contactor.

注： ＊) 至接地部件的间隙。
＊＊) 到方形试验按钮(行程 3mm)的距离。
到圆形复位按钮(行程 2.5mm)的距离要小 2.5mm。
1) 用于 35mm 标准导轨(DIN EN 50 022)。

Note: ＊) The distance to earthed part.
＊＊) The distance to square OFF-button (stroke 3mm)
The distance to round RESET-button (stroke 2.5mm) less 2.5mm.
1) For 35mm standard mounting rail (DIN EN 50 022).

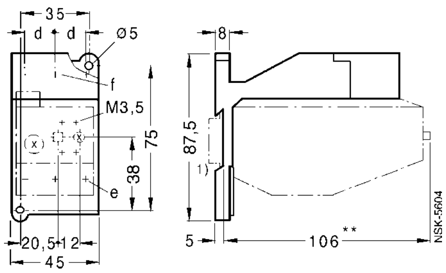
外型及安装尺寸 Dimension drawings



3UA55 与 3TF44/45 接触器接插安装。
3UA55+3TF44/45 contactor

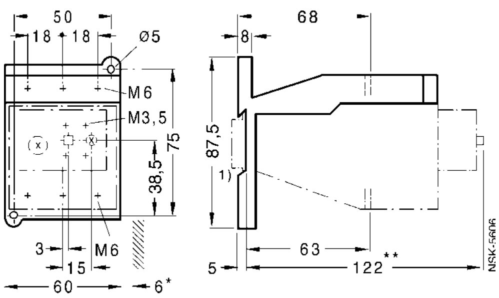
注： *) 至接地部件的间隙。
**) 到方形试验按钮(行程 3mm)的距离。
到圆形复位按钮(行程 2.5mm)的距离要小 2.5mm。
1) 用于 35mm 标准导轨(DIN EN 50 022)。

Note: *) The distance to earthed part.
**) The distance to square OFF-button (stroke 3mm)
The distance to round RESET-button (stroke 2.5mm)less 2.5mm
1) For 35mm standard mounting rail (DIN EN 50 022).

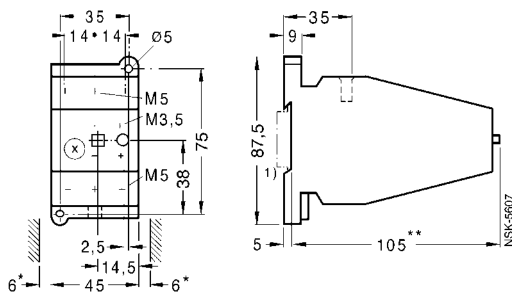


热过载继电器带连接支座 Overload relays with terminal brackets	d	e	f
3UA50 with 3UX1 418	10	M4	M3.5
3UA52 with 3UX1 420	14.3	M4	M4
3UA54 with 3UX1 420	14.3	M4	M4

3UA50, 3UA52, 3UA54 与 3UX14 连接支座组成独立安装单元。
3UA50, 3UA52, 3UA54 relays with terminal bracket as a single unit.



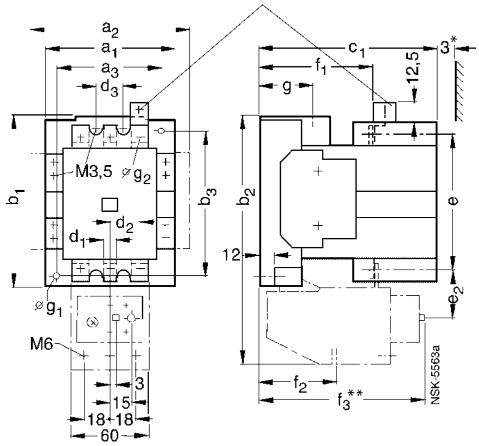
3UA58 与 3UX1421 连接支座组成独立安装单元。
3UA58+3UX1421 terminal bracket as a single unit.



3UA59 独立安装。
3UA59 for installing as a single unit.

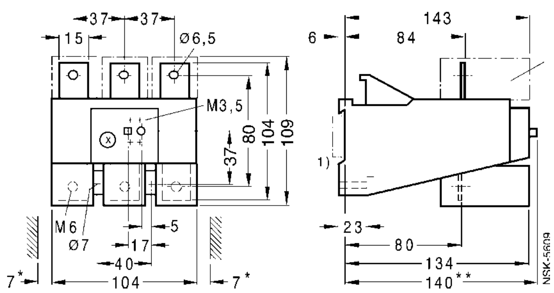
3

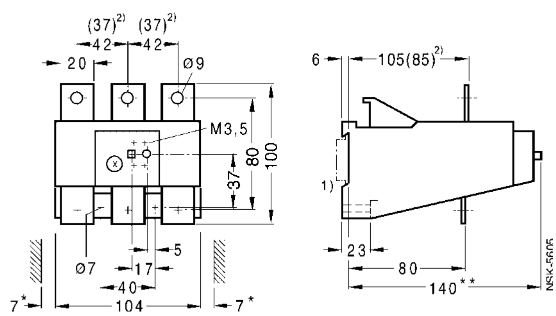
外型及安装尺寸 Dimension drawings



3UA58+	a_1	a_2	a_3	b_1	b_2	b_3	c_1	d_1	d_2	d_3	e	e_1	f_1	f_2	f_3	g	$øg_1$	g_2
3TF46, 3TF47	90	113	70	117	175	100	132	10.5	26.5	25	102	31.5	80	63	122	28	4.8	6.1
3TF48, 3TF49	100	123	80	133	194	110	140	10.5	26.5	25	116	31.5	89	71	132	39	5.5	6.1
3TB46	90	117	70	118	176	100	123	-	29	-	-	34	79	61	122	-	4.8	M5
3TB47, 3TB48	100	127	80	130	192	110	140	-	30	-	-	36	86	68	128	-	5.8	M5/M6

3UA58 与 3TF46, 3TF48, 3TF49, 3TB46, 3TB47, 3TB48 接触器接插安装。
3UA50+3TF46, 3TF48, 3TF49, 3TB46, 3TB47, 3TB48 (plug-in type)





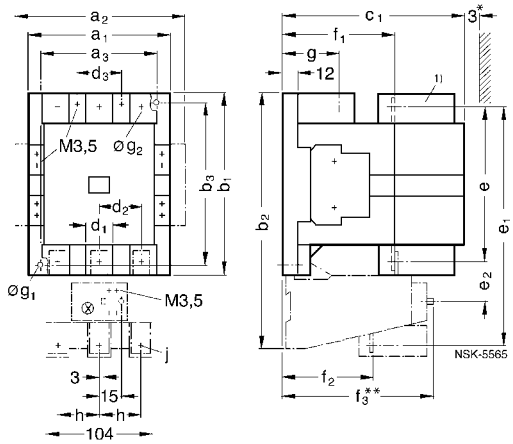
3UA60 与接触器接插安装或配备 3UX1424 独立安装。
3UA60 for mounting on to contactors or mounting as a single unit with 3UX1424.

3UA61, 3UA62 与接触器接插安装或独立安装。
3UA61 3UA62 for mounting on to contactors and for intalling as a single unit

*） 至接地部件的间隙。
**) 到方形试验按钮(行程 3mm)的距离。
到圆形复位按钮(行程 2.5mm)的距离要小 2.5mm。
*） The distance to earthed part.
**) The distance to square OFF-button (stroke 3mm)
The distance to round RESET-button (stroke 2.5mm) less 2.5mm

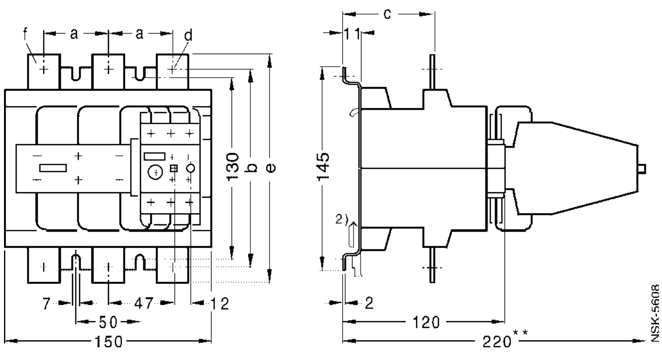
1)用于 35mm 标准导轨(DIN EN 50 022)。
2) 3UA62 的连接排高度和间距可调节以便与 3TF50/3TF52 接触器接插安装。
1) For 35mm standard mounting rail (DIN EN 50 022).
2) Height and spacing of the connection rails can accmodated to 3TF50/3TF52 contactors (not for 3UA61).

外型及安装尺寸 Dimension drawings



	a_1	a_2	a_3	b_1	b_2	b_3	c_1	d_1	d_2	d_3	e	e_1	e_2	f_1	f_2	f_3	$øg_1$	$øg_2$	g
3TB50	120	147	100	150	230	130	150	37	15	-	133	213	43	90	89	149	7	M6	-
3TF51	120	143	100	150	232	130	150	20	42	37	139	215.5	40.5	93	80	146	6.3	M8	45
3TB52	135	162	110	180	257	160	185	42	20	-	154	234	38	115	93	153	7	M8	-
3TF50	120	143	100	150	232	130	150	15	37	37	130	213	40	93	80	146	6.3	6.6	45
3TF52	135	158	110	180	257	160	185	20	42	42	154	234	40	115	93	153	7	M8	48

3UA60, 3UA61, 3UA62 与 3TB50/52, 3TF50/51/52 接触器接插安装。
3UA60, 3UA61, 3UA62+3TB50/52, 3TF50/51/52 Contactors.



3UA66 作为独立单元
For installing as a single unit

型号 Type	a	b	c	d	e	f
3UA66 40-2K-3B	46	140	69	ø9	160	20 × 3
3UA66 40-3C,-3D,-3E	50	140	70	ø11	171	25 × 4

∗) 至接地部件的间隙
∗) 到方形试验按钮(行程 3mm)的距离。
到圆形复位按钮(行程 2.5mm)的距离要小 2.5mm。
1) 仅 3TF50 带有接线端子盒
2) 用于 75mm 标准导轨(DIN EN 50023)
*) The distance to earthed part
**) The distance to square OFF-button (stroke 3mm). The distance to round RESET-button (stroke 2.5mm) less 2.5mm.
1) Box terminals only for 3TF50
2) For 75mm standard mounting rail to DIN EN 50023

3

规范
IEC 947-4-1/DIN VDE 0660 Part 102;
IEC 947-5-1/DIN VDE 0680 Part 200;
IEC 801-2, -3 ,-4, -5; UL 508/CSA C 22.2

应用
热继电器用来保护电气设备 (三相电动机、变压器等等) 免受由于过负荷、不平衡输入电流、缺相或堵转引起的过热损坏。
电子式热继电器可提供非常多样的电动机保护功能：
- 误差小于 10% 高精度脱扣特性。
- 通过可调的脱扣等级达到对正常或重载启动的适应性。(CLASS5/10/15/20/25/30)
- 不受震动、引出导线截面变化、温度波动、腐蚀性环境或老化等外界因素的影响。
- 确定的恢复时间 (此处为 5 分钟)。

3RB12 电子式热继电器在一个装置内部为电气设备的保护提供了 3 种不同机构：
- 通过对电动机每一绕组电流不间断的监视，实现过载保护。
- 通过测量 PTC 热敏元件回路实现电动机过热保护。
- 接地故障保护

内部采用 3 极连接 (在探测到故障电流 > 30% 设定电流 I_e 时认为有接地故障)。
外部采用 3 或 4 极连接，加装零序电流互感器 3UL200.-.A
(在接地故障电流为 0.3A、0.5A 和 1A 时可以可靠检出接地故障)

热敏保护 (全电机保护) 采用 PTC 温度传感器。(例如：用于定子很重要的电机，起制动时间较长的电机，冷却不良或环境温度较高的电机。)

无需附加任何测量元件，从而接线和空间减至最少。

设计和安装
3RB12 电子式热继电器已内置了所有规格的电流互感器。
因采用了穿心式电流互感器系统，电流设定范围 <100A 的继电器设计成单独安装 (总宽度 70 mm)。额定电流为 1.25A 到 100A 的主回路导线只要直接从安装在继电器内的电流互感器中穿过就可以了。避免了额外的接线和端子上的功率损耗。

对于电流 I_N<1.25A 的电动机负载，应将主回路线从电流互感器孔中穿绕数次 (n 次)，I_e 可设成
I_e=n x I_N
(如 I_N = 0.5 A; n = 3; I_e=3x 0.5 A = 1.5 A),
n 最大为 5。
继电器宽度为 70mm，可装在符合 EN50 022 的 35mm 导轨上，或用螺丝通过插入附件固定于安装板上。
额定电流范围 50A 到 820A 的 3RB12 继电器 (宽度为 120mm、145mm 和 230mm) 可以直接通过连接导轨安装在接触器上。螺丝安装附件已包含在继电器中。
3RB1253 可以通过一基座安装在 75mm 的卡入式导轨上。

操作和控制功能
流过电动机的每相电流都通过电流互感器测量并由微处理器监测。通过继电器表面的选择开关可以设定 I_e，当负荷电流超过 110% I_e 时，或有 > 40% I_e 的不平衡电流时，或发生缺相时，在经过按设定脱扣曲线规定的延时后脱扣辅助触点 (1NO/1NC) 动作。(参见脱扣特性曲线 CLASS5/10/15/20/25/30)。
在恢复时间 5 分钟过后，可以通过按 TEST/RESET 按钮或遥控，自动 RESET 功能来复位。
由于热感应元件引发的脱扣动作同样通过此触点实现，但没有时间延迟。在电动机线圈温度降至热敏元件动作温度以下 5 度之后才能复位。

发生接地故障时，脱扣器不带延时动作。由于继电器不同型号，此脱扣信号可能会通过独立的触点 (1NO/1NC) 输出。在此情况下，可以不经过延时就复位。

通过按 TEST/RESET 按钮可以测试下列功能：过流，过热，接地故障和跳闸触点动作。在运行时也可以测试其功能 (LED 显示)。
当继电器发生内部故障时，自检功能会使其脱扣，此时不能复位。

控制电压故障时的功能
在失去控制电压较长时间 (0.2s) 时，不同型号继电器会有不同反应：单稳态或双稳态。

输出继电器的功能	单稳态 3RB12 . . - 0	双稳态 3RB12 . .- 1
控制电源故障	继电器脱扣	辅助触点状态不变
未脱扣时，控制电源恢复	继电器复位	
脱扣后，控制电源恢复	继电器保持脱扣状态 复位: 过载脱扣情况下，5 分钟后可复位; 热敏脱扣情况下，低于动作温度 5 度后，可复位; 接地故障脱扣情况下，立即可复位。	

Specifications

IEC 947-4-1/DIN VDE 0660 Part 102;
IEC 947-5-1/DIN VDE 0680 Part 200;
IEC 801-2, -3 ,-4, -5; UL 508/CSA C 22.2

Application

Overload relays are used for protecting electrical equipment against overheating (three-phase motors, transformers, ...). This can be caused by overloading, unbalanced current input, phase failure (main leads) or a blocked rotor.
Solid-state overload relays provide highlysophisticated motor-protection such as
- high precision of the tripping characteristic with a tolerance of <± 10%
- fine adaptation to normal or heavy starting duty by means of an adjustable trip class (CLASS 5/10/15/20/25/30)
- Independence from outside influence such as shocks, different cable cross-sections, temperature fluctuations, aggres-sive surroundings or ageing
- a defined recover time (here 5 min).
  The 3RB12 electronic overload relays enable protection of electrical equipment and installations with three different protective mechanisms in one unit:
- overload protection with permanent monitoring of the individual currents in the motor leads
- thermistor motor protection with evaluation of a PTC thermistor sensor circuit
- earth-fault protection:
  internal for motors with 3-lead connection (earth-fault detection in the event of fault currents >30% of the current setting I_e in normal operation)
  external for motors with 3 and 4-lead connection by connection of a summation current transformer 3UL22 0.-.A
  (reliable earth-fault detection in the event of fault currents of 0.3 A, 0.5 A and 1 A).

Thermistor protection (full motor protection) is provided by a PTC temperature sensor (e. g. for motors whose stator is the critical component, motors with long starting and breaking procedures, motors with imepded cooling or with high ambient temperatures).

Additional evaluation equipment is not needed.Less space and wiring is therefore required.

Design and mounting

The current transformers for all sizes of the 3RB12 electronic overload relays are already integrated in the housing.
Units with current setting ranges < 100A (overall width 70 mm) are designed for single installation due to the push-through system used.
With this system, the main power leads for rated motor currents of 1.25 A to 100 A are simply pushed through the current transformer integrated in the compact unit ("first loop").
Additional installation work and power losses at the transfer resistor of the terminal points which are otherwise needed are thus avoided.
For rated motor currents I_N smaller than 1.25 A, the motor leads in each phase can be taken through the loop-through holes several times (n times). The current setting
I_e of the unit can then be calculated to
I_e=n x I_N (e.g.: I_N = 0.5 A; n = 3;
I_e=3x 0.5 A = 1.5 A).
n = 5 is recommended as the practical upper limit.
Units with 70 mm overall width are either snapped onto a 35 mm standard mounting rail in accordance with EN 50 022 or are screwed onto a mounting plate by means of push-in lugs which are available as accessories.
For current setting ranges > 50 A to 820 A (overall width: 120 mm. 145 mm and 230 mm) the 3RB12 electronic overload relays can be directly mounted on the contactors via connecting rails.
The screw-mounting for these units is integrated in the housing.
For 3RB 12 53 units (overall width: 120 mm), a baseplate is also available for snap-on mounting on a 75-mm mounting rail.

3

Mode of operation and control

The currently flowing motor current is detected in each phase via current trans-formers and continuously monitored by a microprocessor.
If an overload occurs of > 110% of the current I_e which is set with the rotary knob on the front of the unit, if there is a current unbalance > 40% of I_e or if a phase-failure occurs, tripping is initiated by the switching of two auxiliary contacts (1 NO/1 NC) after expiry of the tripping time which is set with the six-step rotary switch
(CLASS 5/10/15/20/25/30 → see tripping characteristics).
Resetting, either by pressing the TEST/RESET button on the unit or by remote or automatic RESET, is possible after the recovery time of 5 minutes has elapsed.
Tripping due to responding of the thermistor sensor occurs via the same auxiliary contacts but without a time delay. Here, resetting is not possible until the temperature in the motor coil has fallen to 5 K below the operating temperature of the thermistor.
In the event of an earth-fault, the unit trips without a time delay, According to the version of the unit, this may happen via a separate output (1 NO/1 NC). Resetting of the unit is possible in this case without a time delay/ without elapsing of a recovery time.

A test of the unit's functions, namely current detection, the thermistor and earth-fault input, and of the tripping functions of the auxiliary contacts can be initiated by pressing the TEST/RESET button.The test of the unit's functions can also be carried out during operation (LED signals).
A self-monitoring feature also causes the unit to trip when an internal fault oocurs. In this case resetting is not possible

Function in the event of control supply voltage failure

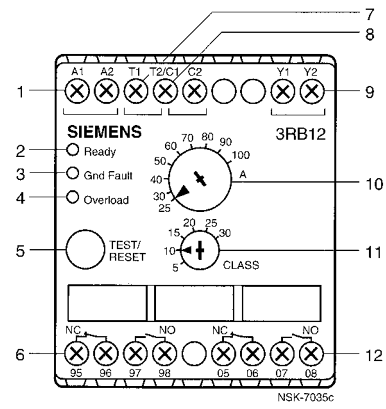
In the case of a long-time failure of the conbtrol supply voltage (> 0.2 s), the output relays relays react in different ways depending on the version: monostable or bistable

Function of the output relays	Monostable 3RB12 . . - 0	Bistable 3RB12 . .- 1
Failure of the control supply voltage	Unit trips	No change in the switching state of the auxiliary contacts
Return of the control supply voltage without trip	Unit resets	
Return of the control supply voltage after trip	Unit remains tripped Resetting: Inthe event of overload tripping, after 5 min; Inthe event of thermistor tripping when 5 K below the operating temperature have been reached; In the event of earth-fault tripping, immediately.	

描述 Description

功能

- 在过载、不平衡电流、缺相或堵转时脱扣
- 可提供全电机保护 (电机绕组中安装 PTC 热敏元件); 通过短接线 A 取消此功能 (见正视图)。过热保护功能为故障安全系统，即：断线时也脱扣
- 接地故障保护
  - 内部采用 3 极连接 (在探测到故障电流 > 30% 设定电流 I_e 时认为有接地故障)
  - 外部采用 3 或 4 极连接，加装零序电流互感器 3UL220. - . A
    (在接地故障电流为 0.3A、0.5A 和 1A 时可以靠检出接地故障) 此电流值适用于 50/60Hz 系统。
- 电流大于下列值时提供过载报警
  - 平衡负载下 1.15 I_e
  - 不平衡负载下 0.85 I_e
    继电器 "overload" LED 闪亮, 或 1NO/1NC 辅助触点动作 (视型号而异)
- 电气绝缘的辅助触点：功能视型号而异
  - 1NO/1NC 用于过电流或热过载脱扣
    1NO/1NC 用于接地故障脱扣
  - 1NO/1NC 用于过电流、热过载或接地故障脱扣
    1NO/1NC 用于过载报警
- 有些型号带单稳态或双稳态功能输出继电器
- 3 个 LED 指示：就绪，接地故障，过载
- 带功能测试的复合测试 / 复位按钮。
- 可通过外接线实现远动、自动复位 (接地故障时不能实现自动复位)
- 可选脱扣曲线 CLASS 5/10/15/20/25/30。
- 设定电流 I_e 选择范围大。
- 脱扣精度高。
- 电流检测不受谐波影响。
- 适应温度范围 -25°C 到 +70°C。
- 自检：内部故障时继电器跳闸。
- 控制电压类型：24VDC, 110-120V AC, 220-240V AC。



1. 控制电压，供电端子
2. 绿 LED “ 就绪 ”
3. 红 LED “ 接地故障 ”
4. 红 LED “ 过载 ”
5. 测试 / 复位按钮
6. 1 NO/1 NC 过载 / 热脱扣
   或 1 NO/1NC 过载 / 热 / 接地脱扣
7. 热敏元件端子
8. 外接零序互感器端子
9. 远动 / 自动复位端子
10. 电流设定旋钮
11. 脱扣级别选择开关
12. 1 NO/1 NC 用于接地故障脱扣，或 1NO/1NC 用于过载警告

图 3/12 热继电器 (正视)

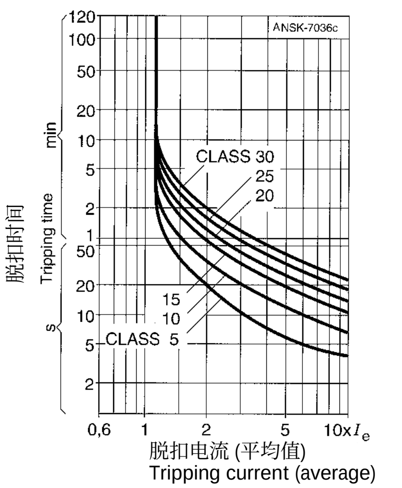


图 3/13 3 极负荷时间 - 电流特性曲线

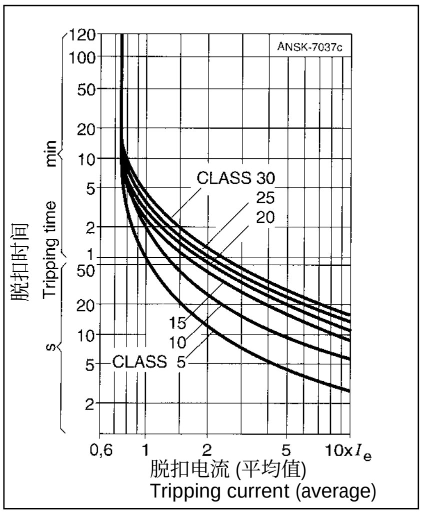


图 3/14 2 极负荷时间 - 电流特性曲线

脱扣特性曲线

3 极负载的时间电流曲线显示脱扣时间与设定电流的倍数有关。

如果断电器带 100% 的预负载，脱扣时间将缩短。

如果带 2 极负载 (缺相) 或不平衡负载 > 40% 设定电流，因采用 2 极脱扣曲线。

PTB 测试报告

3RB12 电子式热继电器符合电动机保护的 “ 增安 ” EExe 标准：

EN 50019/DIN VDE 0165,

DIN VDE 0170/171 和 PTB 测试规则

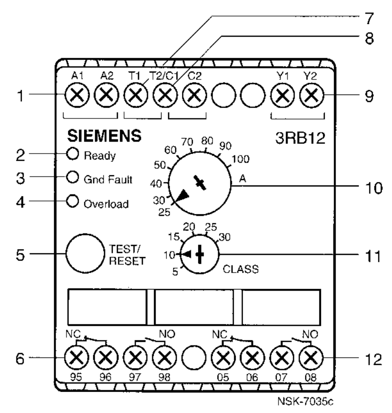
按 DIN VDE 0551，直流操作的热继电器必须采用电池或安全变压器供电，以保证电气绝缘。

对于 3RB12..-..1 继电器 (控制电源失电时，辅助触点不动作)，用于保护 EExe 电机时，应单独提供电源监视。

PTB 批准号 NO. 3.53-3907/96

Functions

- Tripping in the event of overload, current unbalance, phase failure or blocked rotor
- Full motor protection by connection of a thermistor (PTC sensor circuit in the motor coil) possible; it is deactivated by the pre-fitted wire jumper A (see front view). The monitoring system of the thermistor is fail-safe. i.e. a wire break causes tripping.
- Earth-fault monitoring
  - internal for motors with 3-lead connection (earth-fault detection in the event of fault currents > 30% of the current setting I_e)
  - external for motors with 3 and 4-lead connection by connection of a summation current transformer, 3UL22 0. - .A (reliable earth-fault detection in the event of fault currents of 0.3 A, 0.5 A and 1 A). These values are applicable for sinusoidal currents of 50/60 Hz.
- Overload warning above
  - 115 x I_e with balanced load
  - 0.85 x I_e with unbalanced load; display by flashing "overload" LED at the unit or external via 1 NO/1 NC (according to the version of the unit)
- Electrically isolated auxiliary contact Function according to version:
  - 1 NO/1 NC for overload tripping by current and/or thermistor; 1 NO/1 NC for earth-fault tripping
  - 1 NO/1 NC for overload by current and/or themistor and earth-fault; 1 NO/1 NC for overload warning
- Versions of the unit with monostable or bistable functioning of the output relays
- 3 LED displays ("Ready","Ground Fault", "Overload")
- Combined TEST/RESET button with function test
- Remote and automatic RESET by means of external wiring is possible (an automatic RESET in the event of tripping by earth-fault has no effect)
- Selectable trip class (time-lag class): CLASS 5/10/15/20/25/30
- Large ranges of the set current I_e
- High tripping precision
- Current detection immune to harmonics
- Temperature range from -25°C to +70°C
- Self-monitoring, i.e. the units trips in the event of an internal fault
- Versions of the unit for control supply voltages of 24 V DC, 110 to 120 V AC, 220 to 240 V AC.



1 Terminals for control supply voltage
2 Green LED "Ready"
3 Red LED "Ground Fault"
4 Red LED "Overload"
5 TEST/RESET button
6 1 NO/1 NC for overload/thermistor tripping or 1 NO/1 NC for overload/thermistor/earth-fault tripping
7 Thermistor terminals
8 Terminals for external summation current transformer
9 Terminals for remote or automatic RESET
10 Rotary button for current setting
11 CLASS selector rotary knob
12 1 NO/1 NC for earth-fault tripping or 1 NO/1 NC for overload warning

Fig. 3/12 3RB12 overload relay (front view)

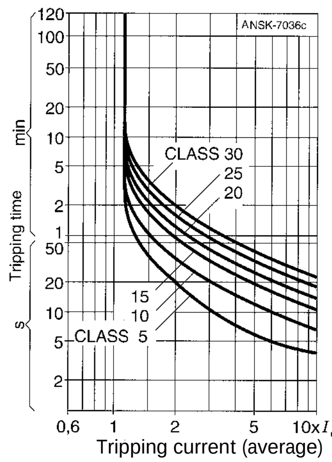


Fig. 3/13 Time-current characteristic for 3-pole loading

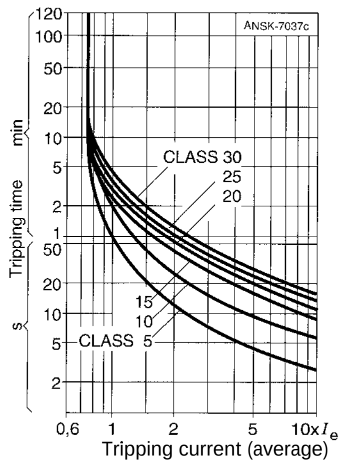


Fig. 3/14 Time-current characteristic for 2-pole loading

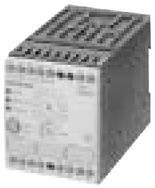
Tripping characteristics

The time-current characteristic for 3-pole symmetric loading (see Fig. 4/13) shows the dependence of the tripping time from a cold state on the multiple of the current setting. If the unit is pre-loaded with 100% of the current setting, the tripping times are shortened.
In the event of 2-pole loading (failure of a phase) or a current unbalance > 40% of the current setting, the 2-pole characteristic applies (see Fig. 4/14).

PTB Test Report

The 3RB12 solid-state overload relay complies with the specifications for the overload protection of flameproof motors of protection type "increased safety" EEx e:
EN 50019/DIN VDE 0165,
DIN VDE 0170/171 and
PTB test regulations.
For overload relays with DC operation, the electrical isolation must be assured by means of a battery supply or a safety transformer according to DIN VDE 0551.
With 3RB 12 ..-....1 units (no change of the switching state of the auxiliary contacts in the case of failure of the control supply voltage) for protection of EEx e electrical motors, separate monitoring of the control supply voltage is recommended.
PTB-Approval-No. 3.53-3907/96

选型订货表 Selection and ordering data



3RB12 46



3RB12 53

额定控制电压	可安装的接触器 型号	宽度 mm	电流设定范围 A	订货号 (下表提供订货后缀) • 优选型号	重量 kg
AC 220 to 240 V	–	70	1.25[1] - 6.3	3RB12 46-1PM ..	0.6
	–	70	6.3 - 25	3RB12 46-1QM ..	0.6
	–	70	25 - 100	3RB12 46-1EM ..	0.6
	3TF50-3TF52	120	50 - 205	3RB12 53-0FM ..	1.0
	3TF53-3TF57	145	125 - 500	3RB12 57-0KM ..	1.9
	3TF68, 3TF69	230	200 - 820	3RB12 62-0LM ..	3.2
AC 110 to 120 V	–	70	1.25[1] - 6.3	3RB12 46-1PG ..	0.6
	–	70	6.3 - 25	3RB12 46-1QG ..	0.6
	–	70	25 - 100	3RB12 46-1EG ..	0.6
	3TF50-3TF52	120	50 - 205	3RB12 53-0FG ..	1.0
	3TF53-3TF57	145	125 - 500	3RB12 57-0KG ..	1.9
	3TF68, 3TF69	230	200 - 820	3RB12 62-0LG ..	3.2
DC 24 V	–	70	1.25[1] - 6.3	3RB12 46-1PB ..	0.6
	–	70	6.3 - 25	3RB12 46-1QB ..	0.6
	–	70	25 - 100	3RB12 46-1EB ..	0.6
	3TF50-3TF52	120	50 - 205	3RB12 53-0FB ..	1.0
	3TF53-3TF57	145	125 - 500	3RB12 57-0KB ..	1.9
	3TF68, 3TF69	230	200 - 820	3RB12 62-0LB ..	3.2

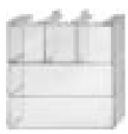
订货号后缀 Order No. supplements

型号 / 输出		订货号后缀 3RB 12 .. -... □ □
1 NO + 1 NC 97/98 + 95/96	1 NO + 1NC 07/08 + 05/06	
外部接地故障检测 (带零序电流互感器 3UL 22 用于 0.3 A, 0.5 A, 1 A 接地电流)		
过载 过热	接地	• 0
过载 过热 接地	过载告警 1 > 1.15 x I_e	1
内部和外部的接地故障检测仅用于 3 相，不能用于单相电机		
过载 过热	接地故障	• 2
过载 过热 接地	过载告警 1 > 1.15 x I_e	3
控制电源缺电时的输出功能 (解释见 “ 描述 ”)	单稳态 双稳态	• 0 1

附件 Accessories




3RB19 00-0A 3RB19 00-0B



3TX7 506-0A



3TX7 506-0B



3UF19 00-0JA00

类型	型号	订货号	重量 kg	装箱数
可封盖板 用于电流和 脱扣曲线选择旋钮	3RB 12	3RB19 00-0A	0.01	1 件
套入式线鼻 可用螺丝固定在安装板上 每 1 继电器需 2 个元件 (1 套 =10 件)	3RB 12 46	3RB19 00-0B	0.01	1 套
端子盖板 用于单独直接安装或装在负荷侧 (1 套 =10 件)	3RB12 53	3TX7 506-0A	0.01	1 套
	3RB12 57	3TX7 536-0A	0.003	2 件
	3RB12 62 用于 3TF68	3TX7 686-0A	0.17	2 件
	3RB 12 62 用于 3TF69	3TX7 696-0A	0.17	2 件
端子盖板 装在接触器和热继电器之间	3RB12 53	3TX7 506-0B	0.01	1 套
	3RB12 57	3TX7 536-0B	0.065	1 件
	3RB12 62 用于 3TF68	3TX7 686-0B	0.065	1 件
	3RB12 62 用于 3TF69	3TX7 696-0B	0.065	1 件
基座 可用于直接安装在 75mm 的标准导轨上	3RB12 53	3UF19 000JA00	0.2	1 件

1) 设定电流为 0.25 A 到 1.25 A 时要将主回路多次绕过互感器。
2) 内部接地探测到 > 30% 的设定电流时认为发生接地故障。

有通信能力的 SIMOCODE-DP 电动机保护和控制装置，见第一部分。

选型订货表 Selection and ordering data



3RB12 46



3RB12 53

Rated control supply voltage	Mountable contactors Type	Width mm	Current setting range A	Order No. (Order No. supplement required from table below) • Preferred type	Weight approx. kg
AC 220 to 240 V	–	70	1.25[1) - 6.3	3RB12 46-1PM ..	0.6
	–	70	6.3 - 25	3RB12 46-1QM ..	0.6
	–	70	25 - 100	3RB12 46-1EM ..	0.6
	3TF50-3TF52	120	50 - 205	3RB12 53-0FM ..	1.0
	3TF63-3TF57	145	125 - 500	3RB12 57-0KM ..	1.9
	3TF68, 3TF69	230	200 - 820	3RB12 62-0LM ..	3.2
AC 110 to 120 V	–	70	1.25[1) - 6.3	3RB12 46-1PG ..	0.6
	–	70	6.3 - 25	3RB12 46-1QG ..	0.6
	–	70	25 - 100	3RB12 46-1EG ..	0.6
	3TF50-3TF52	120	50 - 205	3RB12 53-0FG ..	1.0
	3TF63-3TF57	145	125 - 500	3RB12 57-0KG ..	1.9
	3TF68, 3TF69	230	200 - 820	3RB12 62-0LG ..	3.2
DC 24 V	–	70	1.25[1) - 6.3	3RB12 46-1PB ..	0.6
	–	70	6.3 - 25	3RB12 46-1QB ..	0.6
	–	70	25 - 100	3RB12 46-1EB ..	0.6
	3TF50-3TF52	120	50 - 205	3RB12 53-0FB ..	1.0
	3TF63-3TF57	145	125 - 500	3RB12 57-0KB ..	1.9
	3TF68, 3TF69	230	200 - 820	3RB12 62-0LB ..	3.2

订货号后缀 Order No. supplements

Version Outputs for disconnection			Order No. supplement 3RB 12 .. -... ☐ ☐
1 NO + 1 NC 97/98 + 95/96	1 NO + 1NC 07/08 + 05/06		
External earth-fault detection (with summation current transformer 3UL22 for fault currents 0.3 A, 0.5 A and 1 A)			
Overload Thermistor	Earth-fault		• 0
Overload Thermistor Earth-fault	Overload warning 1 > 1.15 x I_e		1
Internal[2) and external earth-fault detection for 3-conductor connections only, not for single-phase motors			
Overload Thermistor	Earth-fault		• 2
Overload Thermistor Earth-fault	Overload warning 1 > 1.15 x I_e		3
Function of the outputs in case of control supply voltage failure (For an explanation see "Description")		monostable	• 0
		bistable	1

3

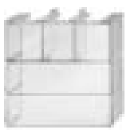
附件 Accessories



3RB19 00-0A



3RB19 00-0B



3TX7 506-0A



3TX7 506-0B



3UF19 00-0JA00

Version	For type	Order No.	Weight approx. kg	Packing
Sealable cap for current-setting knob and CLASS selector	3RB 12	3RB19 00-0A	0.01	1 item
Push-in lugs for screw fitting on a mounting plate. 2 items required per overload relay (1 set = 10 items)	3RB 12 46	3RB19 00-0B	0.01	1 set
Terminal cover for installation as a single unit or load-side when directly mounted (1 set = 10 items)	3RB12 53	3TX7 506-0A	0.01	1 set
	3RB12 57	3TX7 536-0A	0.003	2 items
	3RB12 62 with 3TF68	3TX7 686-0A	0.17	2 items
	3RB 12 62 with 3TF69	3TX7 696-0A	0.17	2 items
Terminal cover between contactor and overload relay when directly mounted (1 set = 10 items)	3RB12 53	3TX7 506-0B	0.01	1 set
	3RB12 57	3TX7 536-0B	0.065	1 item
	3RB12 62 with 3TF68	3TX7 686-0B	0.065	1 item
	3RB12 62 with 3TF69	3TX7 696-0B	0.065	1 item
Base plate for snap-on mounting on 75 mm standard mounting rail	3RB12 53	3UF19 00-0JA00	0.2	1 item

1) The setting range form 0.25 A to 1.25 A is obtained by multiple winding of the main conducting paths.
2) The internal earth-fault detection detects fault currents > 30% from the set current.

Communication-capable SIMOCODE-DP motor protection and control devices, see part 1.

技术数据	Technical data
脱扣	在出现过载，缺相，不平衡电流 (>40% 的整定电流) 时 以及电动机热敏电阻动作和有接地故障时
脱扣曲线等级	在 CLASS 5, 10, 15, 20, 25, 30 间可调
过载报警	平衡负载时 1.15 倍整定电流；不平衡负载时 0.85 倍整定电流
操作	复合式测试 / 复位按钮；自动、远动复位，整定电流旋钮可调，6 级脱扣等级可调 (CLASS 5 到 30)
显示 绿 LED “ 就绪 ” 常亮 灭 红 LED “ 过载 ” 常亮 闪亮 红 LED “ 接地故障 ” 常亮	 运行准备就绪 无电源或功能测试未通过 (装置锁死) 过流或过热脱扣 过载报警 接地故障
允许环境 / 贮藏温度	-25°C ~ +70°C/-40°C ~ +80°C
安装海拔	海拔 2000 m
保护等级 (符合 IEC 529)	IP 20 (最大设定电流 I_e ≤ 100A); IP 00 (最大设定电流 I_e > 100A)
抗震性 (正弦脉冲)	15 *g*/11 ms
组装方式	紧凑式，即电流互感器已装于继电器内
尺寸 宽 x 高 x 深 mm x mm x mm	3RB12 46 (I_e ≤ 100 A): 70 x 85 x 132.5; 3RB12 53 (I_e ≤ 205 A): 120 x 145 x 155; 3RB12 57 (I_e ≤ 500 A): 145 x 160 x 175; 3RB12 62 (I_e ≤ 820 A): 230 x 175 x 190
安装位置	任意
安装方式	3RB12 46: 卡入式，装于 35 mm 标准导轨上，或螺丝固定 3RB12 53, 3RB12 57, 3RB12 62: 可直接装于接触器上，或用螺丝固定
安全绝缘	主辅回路之间： 3RB12 46 < 690 V 采用 6 kV 冲击耐压的电线时 3RB12 53 < 690 V 3RB12 57 (允许情况：污染等级 3) 3RB12 62
EMC 抗干扰能力	导入干扰，尖冲符合 IEC 1000-4-4: 2 kV (严重程度为 3) 导入干扰，峰值符合 IEC 1000-4-5: 2 kV (严重程度为 3) 静电干扰，符合 IEC 1000-4-2: 8 kV (严重程度为 3) 磁场干扰，符合 IEC 1000-4-3: 10 V/m (严重程度为 3)
EMC 射频干扰	限制等级 B 按照 EN 55 011
主回路	
额定绝缘电压 U_i V	3RB12 46: 690 用于裸导体 1000 用于绝缘导体 (污染等级 3) 3RB12 53, 3RB12 57, 3RB12 62: 1000 (污染等级 3)
额定运行电压 U_e V	3RB12 46: 690; 3RB12 53, 3RB12 57, 3RB12 62: 1000 通常
额定冲击耐压 U_{imp} kV	3RB12 46: 6 3RB12 53, 3RB12 57, 3RB12 62: 8
额定频率和电流类型 Hz	50/60; 3 相和保护单相电机 (见线路图)
短路保护	见 4/24 页表
开孔大小 (额定电流 I_e≤100 A)	10 mm (电流 I_e ≤25 A); 15 mm (电流 I_e=100 A); (电流 I_e>100 A 时用连接排安装)
母排连接 (>100 A max. I_e) 拧紧力矩 Nm 线鼻 (用于细多股线) 线鼻 (用于多股线)	3RB12 53 / 3RB12 57 / 3RB12 62 M 8: 10 to 14 / M 10: 14 to 24 / M 10: 14 to 24; M 12: 20 to 35 35 ~ 95 / 50 ~ 240 / 50 ~ 240 50 ~ 120 / 70 ~ 240 / 185 ~ 240
辅助 / 控制回路	
辅助触点 (电气绝缘)	1 NO/1 NC 用于电流 / 热过载脱扣；1 NO/1NC 用于接地故障脱扣 或 1 NO/1 NC 用于电流 / 热 / 接地过载脱扣 1 NO/1 NC 用于过载报警
恢复时间 分钟	5 (固定)，热脱扣后应在绕组温度低于动作温度 5 K 后才恢复。
额定绝缘电压 U_i V	300 (污染等级为 3)
额定冲击耐压 U_{imp} kV	4
热电流 A	6
工作电流	开关功率：AC-15: 6 A/24V; 6A/120V; 3 A/230 V; DC-13: 2 A/24 V; 0.55 A/60 V; 0.25 A/125 V
额定控制电压 U_s	AC 50/60 Hz: 110 V to 120 V; 220 V to 240 V; DC:24 V
动作范围	AC 50/60 Hz: 0.85 to 1.1xU_s, 2 VA; DC 24 V: 0.85 to 1.2xU_s (DIN 19 240), 2 W
失电贮能时间 ms	200
热保护 (PTC 热敏传感器)	冷态电阻：1.5 kΩ; 反应值：2.7 kΩ... 3.1 kΩ; 复位值：1.5 kΩ ... 1.65 kΩ
接地故障反应时间 ms	外部：200-500; 内部：500 to 1000
短路保护	熔丝使用规格 gL/gG 6 A, 快熔 10 A; MCB 1.6 A, C 持性
导线截面 紧固力矩 Nm 硬 mm² 细多股线带 / 不带线套 mm²	 0.8 ~ 1.2 1x(0.5 ~ 4.0); 2x(0.5 ~ 2.5) 1x(0.5 ~ 2.5); 2x(0.5 ~ 1.5)

技术数据	Technical data
Tripping	In case of overload,phase failure and current unbalance (>40% of the current setting I_e) as well as with responding of the thermistor motor protection and in case of earth fault
Trip class	Changeable; CLASS 5, 10, 15, 20, 25, 30
Overload warning	above 1.15 x I_e with balanced loading; above 0.85 x I_e with unbalanced loading
Operation	Combined TEST/RESET button with functional test; automatic and remote RESET possible; rotary knob for current setting I_e; 6-step rotary switch for trip class (CLASS 5 to 30)
Display green LED "Ready" Steady light Off red LED "Overload" Steady light Flashing light red LED "Ground Fault" Steady light	 Ready for operation No control supply voltage or functional test was negative. (Device is locked) Overload tripping by current and/or thermistor Overload warning Earth-fault
Permissible ambient/storage temperature	-25°C to +70°C/-40°C to +80°C
Mounting altitude	up to 2000 m above sea level
Degree of protection (acc. to IEC 529)	IP 20 (max. setting current I_e ≤100A); IP 00 (max. current setting I_e > 100A)
Shock resistance (sine pulse)	15 *g*/11 ms
Type of construction	Compact, i.e. the current transformers for all sizes are already integrated in the housing
Dimensions W x H x D mm x mm x mm	3RB12 46 (I_e≤100 A): 70x85x132.5; 3RB12 53 (I_e ≤205 A): 120x145x155; 3RB12 57 (I_e≤500 A): 145x160x175; 3RB12 62 (I_e≤820 A): 230x175x190
Mixing position	any
Fitting	3RB12 46: snap-on mounting on 35 mm standard mounting rail or screw mounting with accessories 3RB12 53, 3RB12 57, 3RB12 62: can be directly mounted on the contactor or screw mounting
Safe isolation	Between main and auxiliary conducting paths, as well as between main conducting paths: 3RB12 46 up to 690 V when using current cables with an impulse withstand voltage of 6 kV 3RB12 53 up to 690 V 3RB12 57 (marginal condition: pollution degree 3) 3RB12 62
EMC immunity	Conducted interference injection, burst acc. to IEC 1000-4-4: 2 kV (corresponds to severity 3) Conducted interference injection, surge acc. to IEC 1000-4-5: 2 kV (corresponds to severity 3) Electrostatic discharge acc. to IEC 1000-4-2: 8 kV (corresponds to severity 3) Field-generated interference injection acc. to IEC 1000-4-3: 10 V/m (corresponds to severity 3)
EMC emitted interference	Limit-value class B acc. to EN 55 011
Main circuit	
Rated insulation voltage U_i V	3RB12 46: 690 for blank/uninsulated conductors; 1000 for insulated conductors (pollution degree 3) 3RB12 53, 3RB12 57, 3RB12 62: 1000 (pollution degree 3)
Rated operational voltage U_e V	3RB12 46: 690; 3RB12 53, 3RB12 57, 3RB12 62: 1000 general
Rated impulse withstand voltage U_{imp} kV	3RB12 46: 6 3RB12 53, 3RB12 57, 3RB12 62: 8
Rated frequency and type of current Hz	50/60; 3-phase and for protection of single-phase motors (see circuit diagrams)
Short-circuit protection	See table on page 4/16
Diameter of the cut-outs (Max. I_e≤100 A)	10 mm (devices with max. current setting I_e ≤25 A); 15 mm (devices with max. current setting I_e=100 A); (devices with max, current setting I_e>100 A: mounting with connecting bars)
Busbar connection (>100 A max. I_e) tightening torque Nm finely stranded with cable lug mm^2 stranded with cable lug mm^2	3RB12 53 / 3RB12 57 / 3RB12 62 M 8: 10 to 14 / M 10: 14 to 24 / M 10: 14 to 24; M 12: 20 to 35 35 to 95 / 50 to 240 / 50 to 240 50 to 120 / 70 to 240 / 185 to 240
Auxiliary/control circuit	
Auxiliary contacts (electrically isolated)	1 NO/1 NC for overload tripping due to current and/or thermistor; 1 NO/1NC for earth-fault tripping or 1 NO/1 NC for overload tripping due to current and/or thermistor and/or earth-fault: 1 NO/1 NC for overload warning
Recovery time min	5 (fixed), after tripping due to overcurrent. After tripping by the thermistor as long as the motor temperature has not fallen to 5 K below the operating temperature of the thermistor.
Rated insulation voltage U_i V	300 (Pollution degree 3)
Rated impulse withstand voltage U_{imp} kV	4
Conventional thermal current A	6
Rated operational current	Switching capacity: AC-15: 6A/24V; 6 A/120V; 3 A/230 V; DC-13: 2 A/24 V; 0.55 A/60 V; 0.25 A/125 V
Rated control supply voltage U_s	AC 50/60 Hz: 110 V to 120 V; 220 V to 240 V; DC:24 V
Operating range	AC 50/60 Hz: 0.85 to 1.1xU_s, 2 VA; DC 24 V: 0.85 to 1.2xU_s (DIN 19 240), 2 W
Power failure stored-energy time ms	200
Thermistor protection (PTC thermistor sensor)	Summated cold resistance: 1.5 kΩ; Response value: 2.7 kΩ... 3.1 kΩ; Fall-back value: 1.5 kΩ ... 1.65 kΩ
Response time after earth-fault detection ms	External: 200-500; internal: 500 to 1000
Short-circuit protection	Fuse utilization categories gL/gG 6 A, fast 10 A; miniature circuit-breaker 1.6 A, C characteristics
Conductor cross-sections tightening torque Nm solid mm^2 finely stranded with/without end sleeve mm^2	 0.8 to 1.2 1x(0.5 to 4.0); 2x(0.5 to 2.5) 1x(0.5 to 2.5); 2x(0.5 to 1.5)

3

技术数据符合 IEC 947-4 和 DIN VDE 0660 part 102 / Technical data acoording to IEC 947-4 and DIN VDE 0660 part 102

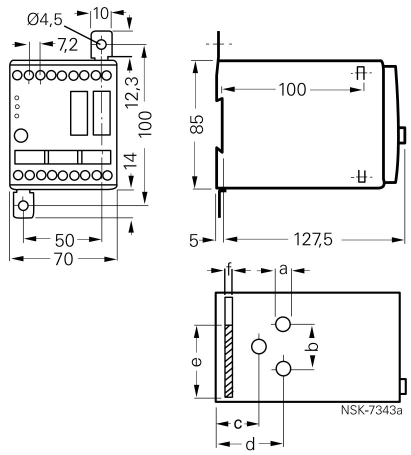
电机带熔丝短路保护短路电流 < 50 kA, 690 V
Short-circuit protection with fuses for motor feeders for short-circuit currents up to 50 kA at 690 V

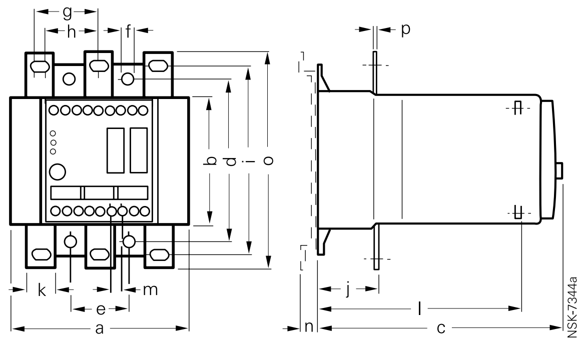
整定电流 Current setting range A 热继电器 Overload relay 型号 Type	接触器 Contactor 型号 Type	等级 CLASS 5 和 10	15	20	25	30	可用的熔丝 Permissible short-circuit fuses LV HRC 型号 3NA, DIAZED 型号 5SB, NEOZED 型号 5SE, Utilization category gL/gG 配合选择特性 "1" Type of coordination[4]) "1" A	Type 3NA, Type 5SB, Type 5SE 配合选择特性 "2" Type of coordination[4]) "2" A	NH 型号 3ND 使用类别 Type 3ND Utilization category aM 配合选择特性 "2" Type of coordination[4]) "2" A	可熔开关 [3]) Fuse links[3]) 英国标准熔丝 BS88 T 型 British Standard fuses BS88 Type T 配合选择特性 "2" Type of coordination[4]) "2" A
		额定工作电流 I_e/AC-3，400 V Rated operational current I_e/AC-3 in A at 400 V								
1.25-6.3 3RB12 46-1P	3RT10 15	6.3	6.3	6.3	6.3	6.3	35	20	–	–
6.3 to 25 3RB12 46-1Q	3RT10 15	7	7	7	7	7	35	20	–	20
	3RT10 16	9	9	9	9	9	35	20	–	20
	3RT10 17	12	11	10	9.5	9	35	20	–	20
	3RT10 24	12	12	12	12	12	63	25	20	25
	3RT10 25	17	17	16	15	14	63	25	20	25
	3RT10 26	25	18	16	15	14	100	35	20	35
	3RT10 34	–	25	22.3	20.3	19.1	125	63	50	63
	3RT10 35	–	–	25	25	25	125	63	50	63
25 to 100 3RB12 46-1E	3RT10 34	32	25.5	–	–	–	125	63	50	63
	3RT10 35	40	33	29.4	28	26.5	125	63	50	63
	3RT10 36	50	38.5	32.7	29.4	26.5	160	80	50	80
	3RT10 44	65	56	49	45	41.7	250	125	63	125
	3RT10 45	80	61	53	47	45	250	160	80	160
	3RT10 46	95	69	59	53	50	250	160	100	160
	3TF50	100	87	76	71	65	400	224	125	160
	3TF51	–	100	97	90	83	400	250	160	200
	3TF52	–	–	100	100	100	400	250	200	200
50 to 205 3RB12 53-0F	3TF50[1])	110	87	76	71	65	400	224	125	160
	3TF51[2])	140	111	97	90	83	400	250	160	200
	3TF52[2])	170	135	118	109	101	400	250	200	250
	3TF53	205	162	143	132	122	400	250	250	250
	3TF54	–	198	174	161	149	400	250	250	250
	3TF55	–	205	205	194	178	400	250	250	250
	3TF56	–	–	–	205	205	400	250	250	250
125 to 500 3RB12 57-0K	3TF52	170	135	–	–	–	400	250	200	250
	3TF53[2])	205	162	143	132	–	400	250	250	315
	3TF54[2])	250	198	174	161	149	500	400	250	355
	3TF55[2])	300	238	208	194	178	500	400	315	400
	3TF56[2])	400	318	278	259	238	800	500	400	450
	3TF57[2])	475	378	332	307	284	800	500	630	500
	3TF68	500	500	440	408	376	800	500	630	500
	3TF69	–	–	500	500	500	800	500	630	500
200 to 820 3RB12 62-0L	3TF68[2])	630	502	440	408	376	1000	500	630	500
	3TF69[2])	820	662	572	531	500	1250	630	630	630

1) 取下端子盒后可装于接触器上
2) 可装于接触器上
3) 注意工作电压
4) 按照 IEC 947-4-1/DIN VDE 0660 Part 102:
配合选择特性 "1"
短路时接触器或起动机器不应引起人身或设备伤害。而去修复或更换之前产品不必能用于正常运行。
配合选择特性 "2" :
短路时接触器或起动器不应引起人身或设备损害，而且应能继续运行可能有触点熔焊。

1) Mounting of contactor is possible (after removing the box terminal block).
2) Mounting of contactor is possible
3) Observe the operational voltage
4) According to excerpt from IEC 947-4-1/DIN VDE 0660 Part 102:
Type of coordination "1":
The contactor or starter must not endanger persons or the installation in the event of a short-circuit. They do not need to be suitable for further operation without repair and the renewal of parts.
Type of coordination "2":
The contactor or starter must not endanger persons or the installation and must be suitable for further use. There is a danger of contact welding.

外形尺寸图 Dimention diagrams





3 RB12 46 热继电器
3 RB12 46 overload relays

热继电器 overload relay	a	b	c	d	e	f
3RB12 46-1E	10	34	29	46	48	4
3RB12 46-1P	10	34	29	46	48	4
3RB12 46-1Q	15	29	24	47	–	–

3 RB12 46 热继电器
3 RB12 46 overload relays

热继电器 overload relay	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
3RB12 53-0F	120	85	155	110	40	Ø7	42	37	125	41	20	131	7.2	13	145	4
3RB12 57-0K	145	85	175	105	50	Ø9	52	48	130	46	30	151	7.2	–	160	6
3RB12 62-0L	230	85	190	120	70	Ø11	70	–	135	55	40	166	7.2	–	175	8

3

线路图 Circuit diagrams

单相电机 / Single-phase motor

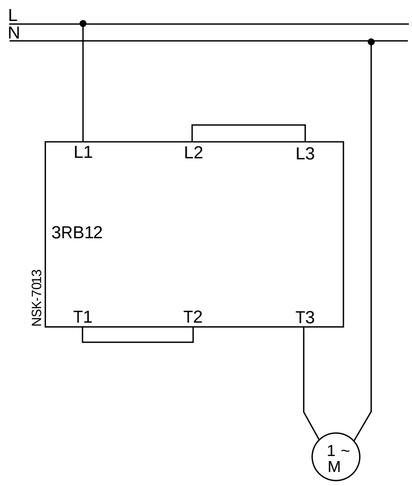


Fig. 3/15
3RB12 46-...1.,-...2.,;
保护单相电机时的接线方法
Connection for protection of single-phase motors

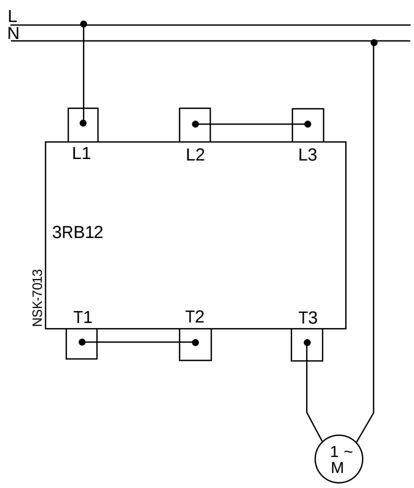


Fig. 3/16
3RB12 53-...1.,-...2.; 3RB12 57-...1.,-...2.;
3RB12 62-...1.,-...2.
保护单相电机时的接线方法
Connection for protection of single-phase motors

电子式时间继电器，安装宽度 22.5cm　Solid-state time relays, assembly width 22.5cm



3RP15 — 页号 Page



7PU5 — 页号 Page



3UG35 — 页号 Page

电压及相位监控继电器
For voltage and phase monitoring

详情请洽西门子办事处
Details please contact Siemens Office

电子式时间继电器，安装宽度 45mm　Solid-state time relays, assembly width 45mm



3RP10 — 页号 Page

7P. 和 3RP1 的对照表 / Replacemet of 7P. time relays with 3RP1 time relays

7P.系列时间继电器我们已不再列入此样本，但某些型号仍有供货。作为替代，我们现提供 SIRIUS 3RP1 时间继电器，此产品技术功能更优，使用方便，价格更廉。
下表告知了如何用 3RP1 替代 7P.系列，若有疑问欢迎垂询。

The 7P. time relays offered until now are no longer included in this catalogue. However, some of them are still available. As replacement 7PU3 types, the SIRIUS 3RP1 time relays are offered. The 3RP1 time relays offer enhanced technical features, functionality and convenience at a more favourable price.
The following replacement list will support you in replacing the 7P. time relays with the 3RP1 time relays. If you have any questions, please contact your regional distributor.

7PU3 数字输入型时间继电器 / 7PU3 time relays with digital setting

7PU30 20/8-...	1)
7PU31 20/8-...	1)
7PU33 20/8-...	1)
7PU30 40-...	1)
7PU31 40-...	1)
7PU33 40-...	1)
7PU33 48-...	1)

7PU4. 20 通电延时，模拟设置时间继电器 / 7PU4. 20 time relays with analog setting, ON-delay

7PU40 20-0AB30	3RP15 11-1AP30
7PU40 20-0AJ20	3RP15 11-1AQ30
7PU40 20-0AN20	3RP15 11-1AP30
7PU40 20-0BB30	3RP15 25-1BP30
7PU40 20-0BJ20	3RP15 25-1BQ30
7PU40 20-0BN20	3RP15 25-1BP30
7PU40 20-1AB30	3RP15 11-1AP30
7PU40 20-1AJ20	3RP15 11-1AQ30
7PU40 20-1AN20	3RP15 11-1AP30
7PU40 20-1BB30	3RP15 25-1BP30
7PU40 20-1BJ20	3RP15 25-1BQ30
7PU40 20-1BN20	3RP15 25-1BP30
7PU40 20-2AB30	3RP15 12-1AP30
7PU40 20-2AJ20	3RP15 12-1AQ30
7PU40 20-2AN20	3RP15 12-1AP30
7PU40 20-2BB30	3RP15 25-1BP30
7PU40 20-2BJ20	3RP15 25-1BQ30
7PU40 20-2BN20	3RP15 25-1BP30
7PU40 20-3AB30	3RP15 13-1AP30
7PU40 20-3AJ20	3RP15 13-1AQ30
7PU40 20-3AN20	3RP15 13-1AP30
7PU40 20-3BB30	3RP15 25-1BP30
7PU40 20-3BJ20	3RP15 25-1BQ30
7PU40 20-3BN20	3RP15 25-1BP30
7PU40 20-4AB30	3RP15 25-1AP30
7PU40 20-4AJ20	3RP15 25-1AQ30
7PU40 20-4AN20	3RP15 25-1AP30
7PU40 20-4BB30	3RP15 25-1BP30
7PU40 20-4BJ20	3RP15 25-1BQ30
7PU40 20-4BN20	3RP15 25-1BP30
7PU40 20-5AB30	3RP15 25-1AP30
7PU40 20-5AJ20	3RP15 25-1AQ30
7PU40 20-5AN20	3RP15 25-1AP30
7PU40 20-5BB30	3RP15 25-1BP30
7PU40 20-5BJ20	3RP15 25-1BQ30
7PU40 20-5BN20	3RP15 25-1BP30
7PU41 20-2AF30	3RP15 25-1BR30
7PU41 20-2AJ20	3RP15 25-1AQ30
7PU41 20-2AN20	3RP15 25-1AP30
7PU41 20-2BF30	3RP15 25-1BR30
7PU41 20-2BJ20	3RP15 25-1BQ30
7PU41 20-2BN20	3RP15 25-1BP30

7PU4. 20 多功能型时间继电器 / 7PU4. 20 multifunction time relays

7PU42 20-2BF30	3RP15 05-1BW30
7PU42 20-2BJ20	3RP15 05-1BQ30
7PU42 20-2BN20	3RP15 05-1BP30
7PU43 20-0BF30	3RP15 05-1BW30
7PU43 20-0BJ20	3RP15 05-1BQ30
7PU43 20-0BN20	3RP15 05-1BP30
7PU43 20-2AF30	3RP15 05-1BW30
7PU43 20-2AJ20	3RP15 05-1AQ30
7PU43 20-2AN20	3RP15 05-1AP30
7PU43 20-2BF30	3RP15 05-1BW30
7PU43 20-2BJ20	3RP15 05-1BQ30
7PU43 20-2BN20	3RP15 05-1BP30
7PU46 20-0AN20	3RP15 05-1AP30
7PU46 20-0BF30	3RP15 05-1BW30
7PU46 20-0BJ20	3RP15 05-1BQ30
7PU46 20-0BN20	3RP15 05-1BP30
7PU46 20-2BF30	3RP15 05-1BW30
7PU46 20-2BJ20	3RP15 05-1AQ30
7PU46 20-2AN20	3RP15 05-1AP30
7PU46 20-2BF30	3RP15 05-1BW30
7PU46 20-2BJ20	3RP15 05-1BQ30
7PU46 20-2BN20	3RP15 05-1BP30

7PU4. 40, 通电延时型 / 7PU4. 40, ON-delay

7PU40 40-2AB30	3RP15 11-1AP30
7PU40 40-2AJ30	3RP15 11-1AQ30
7PU40 40-2AN20	3RP15 11-1AP30
7PU40 40-2AN40	3RP15 05-1BW30
7PU40 40-2AT20	1)
7PU40 40-0BB30	3RP15 25-1BP30
7PU40 40-0BJ30	3RP15 25-1BQ30
7PU40 40-0BN20	3RP15 25-1BP30
7PU40 40-1AB30	3RP15 11-1AP30
7PU40 40-1AJ30	3RP15 11-1AQ30
7PU40 40-1AN20	3RP15 11-1AP30
7PU40 40-1AN40	3RP15 05-1BW30
7PU40 40-1BB30	3RP15 25-1BP30
7PU40 40-1BJ30	3RP15 25-1BQ30
7PU40 40-1BN20	3RP15 25-1BP30
7PU40 40-2AB30	3RP15 12-1AP30
7PU40 40-2AJ30	3RP15 12-1AQ30
7PU40 40-2AN20	3RP15 12-1AP30
7PU40 40-2BB30	3RP15 25-1BP30
7PU40 40-2BJ30	3RP15 25-1BQ30
7PU40 40-2BN20	3RP15 25-1BP30
7PU40 40-3AB30	3RP15 13-1AP30
7PU40 40-3AJ30	3RP15 13-1AQ30
7PU40 40-3AN20	3RP15 13-1AP30
7PU40 40-3BB30	3RP15 25-1BP30
7PU40 40-3BJ30	3RP15 25-1BQ30
7PU40 40-3BN20	3RP15 25-1BP30
7PU40 40-4AB30	3RP15 25-1AP30
7PU40 40-4AJ30	3RP15 25-1AQ30
7PU40 40-4AN20	3RP15 25-1AP30
7PU40 40-4BB30	3RP15 25-1BP30
7PU40 40-4BJ30	3RP15 25-1BQ30
7PU40 40-4BN20	3RP15 25-1BP30
7PU40 40-5AB30	3RP15 25-1AP30
7PU40 40-5AJ30	3RP15 25-1AQ30
7PU40 40-5AN20	3RP15 25-1AP30
7PU40 40-5BB30	3RP15 25-1BP30
7PU40 40-5BJ30	3RP15 25-1BQ30
7PU40 40-5BN20	3RP15 25-1BP30
7PU41 40-0BN40	3RP15 05-1BW30
7PU41 40-2BB30	3RP15 25-1BP30
7PU41 40-2BE30	3RP15 25-1BR30
7PU41 40-2BF30	3RP15 25-1BR30
7PU41 40-2BJ30	3RP15 25-1BQ30
7PU41 40-2BN20	3RP15 05-1BP30
7PU41 40-2BN40	3RP15 05-1BW30
7PU41 40-2BT20	1)
7PU41 40-2QB30	1)
7PU41 40-2QE30	1)
7PU41 40-2QF30	1)
7PU41 40-2QJ20	1)
7PU41 40-2QN20	1)

7PU43 40 多功能型时间继电器 / 7PU43 40 multifunction time relay

7PU43 40-2AB30	3RP15 05-1AP30
7PU43 40-2AE30	3RP15 05-1BW30
7PU43 40-2AF30	3RP15 05-1BW30
7PU43 40-2AJ30	3RP15 05-1BW30
7PU43 40-2AN20	3RP15 05-1AP30
7PU43 40-2AN40	3RP15 05-1BW30
7PU43 40-2AT20	1)

7PU4. 40 断电延时带辅助电压 / 7PU4. 40 OFF-delay with auxiliary voltage

7PU44 40-0AB30	3RP15 05-1AP30
7PU44 40-0AJ30	3RP15 05-1AQ30
7PU44 40-0AN20	3RP15 05-1AP30
7PU44 40-1AB30	3RP15 31-1AP30
7PU44 40-1AJ30	3RP15 31-1AQ30
7PU44 40-1AN20	3RP15 31-1AP30
7PU44 40-2AB30	3RP15 32-1AP30
7PU44 40-2AJ30	3RP15 32-1AQ30
7PU44 40-2AN20	3RP15 32-1AP30
7PU44 40-2BB30	3RP15 05-1BP30
7PU44 40-2BE30	3RP15 05-1BW30
7PU44 40-2BF30	3RP15 05-1BW30
7PU44 40-2BJ30	3RP15 05-1BW30
7PU44 40-2BN20	3RP15 05-1BP30
7PU44 40-2BN40	3RP15 05-1BW30
7PU44 40-2BT20	1)
7PU44 40-3AB30	3RP15 33-1AP30
7PU44 40-3AJ30	3RP15 33-1AQ30
7PU44 40-3AN20	3RP15 33-1AP30
7PU44 40-4AB30	3RP15 05-1AP30
7PU44 40-4AJ30	3RP15 05-1BW30
7PU44 40-4AN20	3RP15 05-1AP30
7PU44 40-5AB30	3RP15 05-1AP30
7PU44 40-5AJ30	3RP15 05-1BW30
7PU44 40-5AN20	3RP15 05-1AP30
7PU46 40-...	

4

3RP1 时间继电器替代 7P. 时间继电器，3RT19 延时模块替代 7PX7 延时模块
Replacement of 7P. time relays with 3RP1 time relays and 7PX7 time-delay blocks with 3RT19 time-delay blocks

7PU45，断电延时无辅助电压
7PU45，OFF-delay without auxiliary voltage

7PU45 20-2AB30	3RP15 40-1AB30
7PU45 20-2AE30	[1])
7PU45 20-2AF30	[1])
7PU45 20-2AJ30	3RP15 40-1AJ30
7PU45 20-2AN30	3RP15 40-1AN30
7PU45 20-2BB30	3RP15 40-1BB30
7PU45 20-2BE30	[1])
7PU45 20-2BF30	[1])
7PU45 20-2BJ30	3RP15 40-1BJ30
7PU45 20-2BN30	3RP15 45-1BN30
7PU45 40-2BB30	3RP15 40-1BB30
7PU45 40-2BE30	[1])
7PU45 40-2BF30	[1])
7PU45 40-2BJ30	3RP15 40-1BJ30
7PU45 40-2BN30	3RP15 40-1BN30

7PU47 时钟脉冲功能
7PU47 clock-pulse relays

7PU47 20-0AB30	3RP15 55-1AP30
7PU47 20-0AE30	3RP15 55-1AR30
7PU47 20-0AF30	3RP15 55-1AR30
7PU47 20-0AJ20	3RP15 55-1AQ30
7PU47 20-0AN20	3RP15 55-1AP30
7PU47 20-1AB30	3RP15 55-1AP30
7PU47 20-1AE30	3RP15 55-1AR30
7PU47 20-1AF30	3RP15 55-1AR30
7PU47 20-1AJ20	3RP15 55-1AQ30
7PU47 20-1AN20	3RP15 55-1AP30
7PU47 20-3AB30	3RP15 55-1AP30
7PU47 20-3AE30	3RP15 55-1AR30
7PU47 20-3AF30	3RP15 55-1AR30
7PU47 20-3AJ20	3RP15 55-1AQ30
7PU47 20-3AN20	3RP15 55-1AP30

7PU5. 20 闪烁脉冲功能
7PU5. 20 flasher relays

7PU51 20-...	仍供应

7PU57 20 间隔脉冲功能
7PU57 20 interval time-delay relays

7PU57 20-...	仍供应

7PU6. 20 星三角功能
7PU6. 20 time relays with delta function

7PU60 20-2NB30	3RP15 76-1NP30
7PU60 20-2NE30	3RP15 05-1BW30
7PU60 20-2NF30	3RP15 05-1BW30
7PU60 20-2NJ20	3RP15 76-1NQ30
7PU60 20-2NN20	3RP15 76-1NP30
7PU60 20-2NT20	[1])
7PU60 20-7NB30	3RP15 74-1NP30
7PU60 20-7NE30	3RP15 05-1BW30
7PU60 20-7NF30	3RP15 05-1BW30
7PU60 20-7NJ20	3RP15 74-1NQ30
7PU60 20-7NN20	3RP15 74-1NP30
7PU60 20-7NT20	[1])
7PU60 40-2NT20	[1])
7PU62 20-2NB30	3RP15 05-1BP30[2])
7PU62 20-2NE30	3RP15 05-1BW30[2])
7PU62 20-2NF30	3RP15 05-1BW30[2])
7PU62 20-2NJ20	3RP15 05-1BP30[2])
7PU62 20-2NJ30	3RP15 05-1BW30[2])
7PU62 20-2NN30	3RP15 05-1BP30[2])
7PU62 20-2NN30	3RP15 05-1BW30[2])
7PU62 20-2NT20	[1])
7PU62 20-7NB30	3RP15 05-1BP30[2])
7PU62 20-7NE30	3RP15 05-1BW30[2])
7PU62 20-7NF30	3RP15 05-1BW30[2])
7PU62 20-7NJ20	3RP15 05-1BP30[2])
7PU62 20-7NJ40	3RP15 05-1BW30[2])
7PU62 20-7NN40	3RP15 05-1BW30[2])
7PU62 20-7NN40	3RP15 05-1BW30[2])
7PU62 20-7NT20	[1])

7PU7 两线式时间继电器
7PU7 two-wire time relays

7PU70 20-0CB30	3RP15 27-1EC30
7PU70 20-0CM30	3RP15 27-1EM30
7PU70 20-1CB30	3RP15 27-1EC30
7PU70 20-1CM30	3RP15 27-1EM30
7PU70 20-2CB30	3RP15 27-1EC30
7PU70 20-2CM30	3RP15 27-1EM30
7PU70 20-3CB30	[1])
7PU70 20-3CM30	[1])
7PU70 20-4CB30	[1])
7PU70 20-4CM30	[1])
7PU70 20-7CB30	3RP15 27-1EC30
7PU70 20-7CM30	3RP15 27-1EM30
7PU72 20-0CB40	[1])
7PU72 43-0CB40	[1])

SIMICONT 型 7PU8 时间继电器
SIMICONT 7PU8. 40 time relays

7PU80 40-0AB30	3RP10 20-1AP30
7PU80 40-0AJ20	3RP10 20-1AQ30
7PU80 40-0AN20	3RP10 20-1AP30
7PU80 40-1AB30	3RP10 20-1AP30
7PU80 40-1AJ20	3RP10 20-1AQ30
7PU80 40-1AN20	3RP10 20-1AP30
7PU80 40-2AB30	3RP10 20-1AP30
7PU80 40-2AJ20	3RP10 20-1AQ30
7PU80 40-2AN20	3RP10 20-1AP30
7PU80 40-3AB30	3RP10 20-1AP30
7PU80 40-3AJ20	3RP10 20-1AQ30
7PU80 40-3AN20	3RP10 20-1AP30
7PU81 40-2AB30	3RP10 20-1AP30
7PU81 40-2AE30	3RP15 05-1BW30
7PU81 40-2AF30	3RP15 05-1BW30
7PU81 40-2AJ20	3RP10 20-1AQ30
7PU81 40-2AN20	3RP10 20-1AP30
7PU83 40-2AB30	3RP10 00-1AP30
7PU83 40-2AE30	3RP15 05-1BW30
7PU83 40-2AF30	3RP15 05-1BW30
7PU83 40-2AJ20	3RP10 00-1AQ30
7PU83 40-2AN20	3RP10 00-1AP30
7PU85 40-1...	3RP15 40-1BB30
7PU85 40-2...	[1])
7PU85 40-3...	[1])
7PU85 40-4...	3RP15 40-1BJ30
7PU85 40-5...	3RP15 40-1BN30
7PU86 40-0AB30	3RP10 00-1AP30
7PU86 40-0AJ20	3RP10 00-1AQ30
7PU86 40-0AN20	3RP10 00-1AP30
7PU86 40-2AB30	3RP10 00-1AP30
7PU86 40-2AE30	3RP15 05-1BW30
7PU86 40-2AF30	3RP15 05-1BW30
7PU86 40-2AJ20	3RP10 00-1AQ30
7PU86 40-2AN20	3RP10 00-1AP30
7PU87 40-...	[1])

7PU8 柜面安装型
7PU8 time relays for panel mounting

7PU8. 43-...	[1])
7PU8. 38-...	[1])

7PU8 马达驱动型
7PU8 motor-driven time relays

7PR41 40-...	[1])

7PX7 40 模块型
7PX7 40 time relays as built-on blocks

7PX70 40-0CF30	3RT19 26-2CG11
7PX70 40-0CJ30	3RT19 26-2CH11
7PX70 40-0CN20	3RT19 26-2CH11
7PX70 40-0CN40	3RT19 26-2CH11
7PX70 40-1CF30	3RT19 26-2CG21
7PX70 40-1CJ30	3RT19 26-2CH21
7PX70 40-1CN20	3RT19 26-2CH21
7PX70 40-1CN40	3RT19 26-2CH21
7PX70 40-2CF30	3RT19 26-2CG31
7PX70 40-2CJ30	3RT19 26-2CH31
7PX70 40-2CN20	3RT19 26-2CH31
7PX70 40-2CN40	3RT19 26-2CH31
7PX70 40-7CF30	3RT19 26-2CG31
7PX70 40-7CJ30	3RT19 26-2CH31
7PX70 40-7CN20	3RT19 26-2CH31
7PX71 40-0CF30	[1])
7PX71 40-0CJ20	[1])
7PX71 40-0CN40	[1])
7PX73 40-0CB30	3RT19 16-2CG11
7PX73 40-0CM30	3RT19 16-2CH11
7PX73 40-1CB30	3RT19 16-2CH21
7PX73 40-1CM30	3RT19 16-2CH21
7PX73 40-2CB30	[1])
7PX73 40-2CM30	[1])
7PX73 40-3CB30	3RT19 16-2CG31
7PX73 40-3CM30	3RT19 16-2CH31
7PX73 40-7CB30	3RT19 16-2CG31
7PX73 40-7CM30	3RT19 16-2CH31

附件
Accessories

7PX9 906	仍供应
7PX9 913	仍供应

(1) 不能直接替换，请洽西门子办事处
(2) 须连接模块

(1) Direct replacement (e.g. on account of different time setting ranges) not possible. For replacement type, see selection tables on pages 4/4 ~ 4/10).
(2) Additional adaptation of wiring required.

选型与订货数据 Selection and ordering data

螺钉及笼卡接线
Screw and cage clamp connection

一般用于控制系统及机械工程
For general use in control systems and mechanical engineering

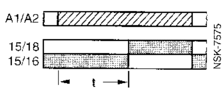
电子式时间继电器拥有 /Solid-state time relays with
- 1 转换触头 /1 changeover contact
- 8 段时间设定 /eight selectable time setting ranges
- LED 显示开关状态及电源状态显示
  switching position and voltage indicaftion by LEDs
- 线图及触头间安全绝缘
  根据 DIN VDE 0106, 101 部分
  safe isolation between coil and contact
  according to DIN VDE 0160 Part 101



3RP10 00-2A...



3RP10 00-1A...

类型 Version	功能 / Function ▨ 通电 time relay energized ▭ 触头闭合 contact closed □ 触头断开 contact open	时间设定范围 Time setting range *t* 旋钮可调 adjustable by rotary switch	额定控制电压 Rated control supply voltage AC 50/60Hz V	DC V	订货号 Order No.	重量 Weight approx. kg
3RP10 00，多功能时间继电器，8 段时间设定 /3RP10 00, multifunction time relay, 8 time setting ranges						
LED 显示 With LED 1 转换触头，7 功能 1 CO contact, 7 functions A1 与 B1，A3 与 B3 等电势 The terminals A1 and B1 or A3 and B3 must be of equal potential.	3RP10 00 时间继电器可根据编码插件设置不同功能。 随机提供编码插件。 The 3RP10 00 time relay can be set for different functions by means of coding plugs. The required coding plugs are supplied with the relay. 功能查阅 7PX9 904 编码插件。 For functions, see 7PX9 904 coding plugs.	0.05 - 1 s 0.5 - 10 s 0.05 - 1 min 5 - 100 s 0.5 - 10 min 0.05 - 1 h 5 - 100 min 0.5 - 10 h	24/100-127 24/200-240	24 24	3RP10 00 - 1AQ30 3RP10 00 - 2AQ30 ³) 3RP10 00 - 1AP30 3RP10 00 - 2AP30 ³)	0.1
3RP10 20，通电延时，8 段时间设定 /3RP10 20, ON-delay, 8 time setting ranges						
LED 显示 With LED 1 转换触头，延时 1 CO contact, delayed	通电延时 ON-delay 	0.05 - 1 s 0.5 - 10 s 0.05 - 1 min 5 - 100 s 0.5 - 10 min 0.05 - 1 h 5 - 100 min 0.5 - 10 h	24/100-127 24/200-240	24 24	3RP10 20 - 1AQ30 3RP10 20 - 2AQ30 ³) 3RP10 20 - 1AP30 3RP10 20 - 2AP30 ³)	0.1

笼卡接线
CAGE CLAMP

附件 Accessories

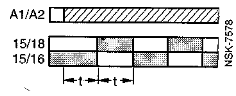
编码插件 /Coding plugs

	类型 Version	功能 Function	应用 Application	订货号 Order No.	重量 Weight approx.
	整套带 7 种功能 complete set with 7 functions	通电延时 带辅助电压断电延时 通电及断电延时 闪烁 瞬动触头接通 瞬动触头断开 (带辅助电压) 脉冲 (带辅助电压) ON-delay OFF-delay with auxiliary voltage ON-delay and OFF-delay with auxiliary voltage flashing passing make contact passing break contact with auxiliary voltage pulse shaping with auxiliary voltage	用于 1 转换触头继电器 for relays with 1 changeover contact	7PX9 904	0.02

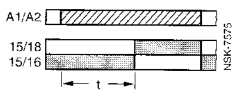
7PX9 904 编码插件功能图 (1 转换触头) Function table for 7PX9 904 coding plugs (1 changeover contact)

功能 /Function
通电 /time relay energized
触头闭合 /contact closed
触头断开 /contact open

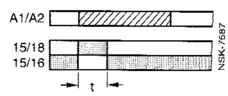
闪烁 (脉冲 / 间隙 1:1)
flashing, staring with interval
(pulse/interval 1:1)



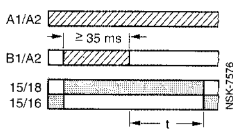
通电延时 /ON-delay



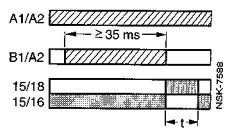
瞬动触头接通
passing make contact



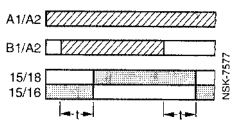
断电延时 /OFF-delay
(带辅助电压)/with auxiliary voltage



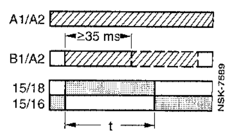
用辅助电压进行瞬动触头断开
passing bread contact
with auxiliary voltage



通电及带辅助电压的断电延时
ON- and OFF-delay
with auxiliary voltage
($t = t_{ON} = t_{OFF}$)



脉冲，带辅助电压
pulse shaping
with auxiliary voltage
(pulse generation at the output does not depend on duration of energizing)



1) 线圈电压范围为 0.85 ~ 1.1 x U_S
2) 线圈电压范围为 0.8 ~ 1.25 x U_S
3) 带笼卡式接线端子的型号

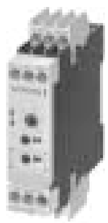
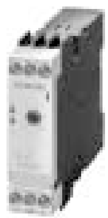
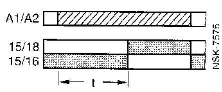
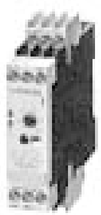
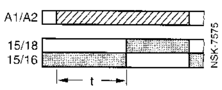
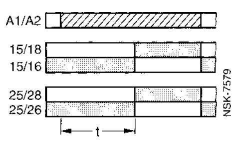
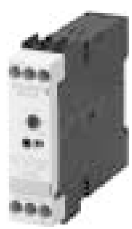
1) Coil voltage tolerance from 0.85 to 1.1 x U_S.
2) Coil voltage tolerance from 0.8 to 1.25 x U_S.
3) Version with cage clamp connection.

选型与订货数据 Selection and ordering data

螺钉接线
Screw connection

通常用于控制系统与机械工程领域
For general use in control systems and mechanical engineering

电子式时间继电器拥有 / Solid-state time relays with
- 1 或 2 个转换触头 / 1 or 2 changeover contacts
- 1 个或可选时间设定范围 / single or selectable time setting ranges
- LED 显示开关状态 / switching position indication by LED
- LED 显示电源状态 / voltage indicaftion by LED

	类型 Version	功能 / Function: ▨ 通电 time relay energized; ▭ 触头闭合 contact closed; □ 触头断开 contact open	时间设定范围 Time setting range *t* 旋钮可调 adjustable by rotary switch to	额定控制电压 Rated control supply voltage AC 50/60Hz V	DC V	订货号 Order No.	重量 Weight approx. kg
	3RP15 05, 多功能型，15 段时间设定 / 3RP15 05, multifunction time relay, 15 time setting ranges						
 3RP15 05-1B	LED 显示 With LED 1 转换触头，8 功能 1 CO contact, 8 functions	功能见 3RP19 01-0 功能标牌套装，可由旋钮设定。3RP15 05 时间继电器可提供带识别标记的不同功能标牌。相应的功能标牌作为附件供应。A、B 端子必须保持等电势。 The functions, see 3RP19 01-0 label set, can be selected by means of a rotary switch. The 3RP15 05 time relay can be provided with labels which allow for legible and unmistakable marking of different functions. The corresponding labels are supplied as accessories. The terminals A. and B. must be of equal potential.	0.05 - 1 s 0.15 - 3 s 0.5 - 10 s 1.5 - 30 s 0.05 - 1 min 5 - 100 s 0.15 - 3 min 0.5 - 10 min 1.5 - 30 min 0.05 - 1 h 5 - 100 min 0.15 - 3 h 0.5 - 10 h 1.5 - 30 h 5 - 100 h ∞ 1)	24/100-127 24/200-240	24 24	3RP15 05 - 1AQ30 3RP15 05 - 1AP30	0.14
	2 转换触头，16 功能 2 CO contact, 16 functions			24/100-127 24/200-240 24-240	24 24 24-240 3)	3RP15 05 - 1BQ30 3RP15 05 - 1BP30 3RP15 05 - 1BW30	0.15
	3RP15 1., 通电延时，1 段时间设定 / 3RP15 1., ON-delay, 1 time setting ranges						
 3RP15 1-1A...	LED 显示 With LED 1 转换触头 1 CO contact	通电延时 ON-delay 	0.05 - 1 s	24/100-127 24/200-240	24 24	3RP15 11 - 1AQ30 3RP15 11 - 1AP30	0.1
			1.5 - 30 s	24/100-127 24/200-240	24 24	3RP15 12 - 1AQ30 3RP15 12 - 1AP30	
			5 - 100 s	24/100-127 24/200-240	24 24	3RP15 13 - 1AQ30 3RP15 13 - 1AP30	
	3RP15 25, 通电延时，15 段时间设定 / 3RP15 25, ON-delay, 15 time setting ranges						
 3RP15 25-1B...	LED 显示 With LED 1 转换触头 1 CO contact	通电延时 ON-delay 	0.05 - 1 s 0.15 - 3 s 0.5 - 10 s 1.5 - 30 s 0.05 - 1 min 5 - 100 s 0.15 - 3 min 0.5 - 10 min 1.5 - 30 min 0.05 - 1 h 5 - 100 min 0.15 - 3 h 0.5 - 10 h 1.5 - 30 h 5 - 100 h ∞ 1)	24/100-127 24/200-240	24 24	3RP15 25 - 1AQ30 3RP15 25 - 1AP30	0.11
	2 转换触头 2 CO contact			42-48, 60 24/100-127 24/200-240	42-48, 60 2) 24 24	3RP15 25 - 1BR30 3RP15 25 - 1BQ30 3RP15 25 - 1BP30	0.11
	3RP15 27, 通电延时，2 线型，4 段时间设定 / 3RP15 27, ON-delay, two-wire version, 4 time setting ranges						
 3RP15 27-1E...	1 常开延时触头，半导体 1 NO delayed, semi-conductor	通电延时 / ON-delay 2 线式时间继电器与负载串联，在得电后继电器延时动作。接着，半导体输出端导通，负载得电。 The two-wire time relay is connected in series with the load. After applying the energizing voltage, the timing starts. Then the semi-conductor output is conducting and the voltage is applied to the load.	0.05 - 1 s 0.2 - 4 s 1.5 - 30 s 12 - 240 s	24/66 90-240	24-66 2) 90-240 2)	3RP15 27 - 1EC30 3RP15 27 - 1EM30	0.1

1) 当设定"∞"时，无延时功能，仅用于现场检测。
   如：检测开关动作性能。
2) 线圈电压工作范围 0.8 ~ 1.1 x U_{s}
3) 线圈电压工作范围 0.7 ~ 1.1 x U_{s}

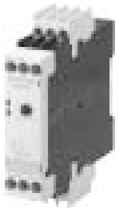
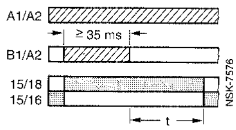
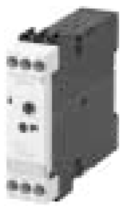
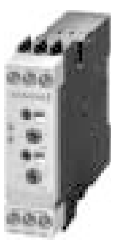
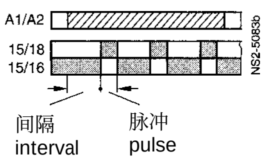
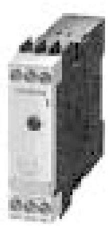
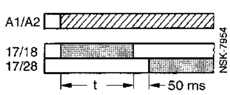
1) With selection of ∞, no timing (NO/OFF function).
   For test purposes on site, e.g. testing of activation without switching.
2) Coil voltage tolerance: 0.8 to 1.1 x U_s.
3) Coil voltage tolerance: 0.7 to 1.1 x U_s.

选型与订货数据 Selection and ordering data

螺钉接线
Screw connection

通常用于控制系统与机械工程领域
For general use in control systems and mechanical engineering

电子式时间继电器拥有 / Solid-state time relays with
- 1 或 2 个转换触头 / 1 or 2 changeover contacts
- 1 个或可选时间设定范围 / single or selectable time setting ranges
- LED 显示开关状态 / switching position indication by LED
- LED 显示电源状态 / voltage indicaftion by LED

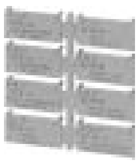
	类型 Version	功能 / Function ▨ 通电 time relay energized ▭ 触头闭合 contact closed □ 触头断开 contact open	时间设定范围 Time setting range t 旋钮可调 adjustable by rotary switch to	额定控制电压 Rated control supply voltage AC 50/60Hz V	DC V	订货号 Order No.	重量 Weight approx. kg
	3RP15 3., 断电延时带辅助电压，1 段时间设定 / 3RP15 3., OFF-delay, with auxiliary voltage, 1 time setting ranges						
 3RP15 3.-1A...	LED 显示 With LED 1 转换触头 1 CO contact	断电延时带辅助电压 OFF-delay with auxiliary voltage 	0.5 - 10 s	24/100-127 24/200-240	24 24	3RP15 31 - 1AQ30 3RP15 31 - 1AP30	0.13
			1.5 - 30 s	24/100-127 24/200-240	24 24	3RP15 32 - 1AQ30 3RP15 32 - 1AP30	
			5 - 100 s	24/100-127 24/200-240	24 24	3RP15 33 - 1AQ30 3RP15 33 - 1AP30	
	3RP15 40, 断电延时，无辅助电压，7 段时间设定 / 3RP15 40, OFF-delay, without auxiliary voltage, 7 time setting ranges						
 3RP15 40-1B...	LED 显示 With LED 1 转换触头 1 CO contact	断电延时，无辅助电压 OFF-delay without auxiliary voltage	0.05 - 1 s 0.15 - 3 s 0.3 - 6 s 0.5 - 10 s 1.5 - 30 s 3 - 60 s 5 - 100 s	24 100-127 200-240	24 ²) 100-127 ³) 200-240 ³)	3RP15 40 - 1AB30 3RP15 40 - 1AJ30 3RP15 40 - 1AN30	0.13
	2 转换触头 2 CO contact			24 100-127 200-240	24 ²) 100-127 ³) 200-240 ³)	3RP15 40 - 1BB30 3RP15 40 - 1BJ30 3RP15 40 - 1BN30	0.15
	3RP15 55, 时钟脉冲，15 段时间设定 / 3RP15 55, clock-pulse relay, 15 time setting ranges						
 3RP15 55-1A...	LED 显示 With LED 1 转换触头 1 CO contact	带间隔的时钟脉冲 clock pulse, starting with interval  (间隔时间，脉冲时间及时间设定范围均单独可调 interval time, pulse time and time setting ranges separately adjustable)	0.05 - 1 s 0.15 - 3 s 0.5 - 10 s 1.5 - 30 s 0.05 - 1 min 5 - 100 s 0.15 - 3 min 0.5 - 10 min 1.5 - 30 min 0.05 - 1 h 5 - 100 min 0.15 - 3 h 0.5 - 10 h 1.5 - 30 h 5 - 100 h ∞ ¹)	42-48, 60 24/100-127 24/200-240	42-48, 60 ⁴) 24 24	3RP15 55 - 1AP30 3RP15 55 - 1AQ30 3RP15 55 - 1AP30	0.11
	3RP15 7., 星三角功能，转换时间 50ms，1 个时间设定范围 / 3RP15 7., star-delta function, dead interval 50 ms, 1 time setting ranges ⁵)						
 3RP15 7-1N...	1 常开延时触头和 1 常开瞬动触头 1 NO delayed and 1 NO instantaneous (connected to a common potential)	星三角 / star-delta 	1 - 20 s	24/100-127 24/200-240	24 24	3RP15 74 - 1NQ30 3RP15 74 - 1NP30	0.11
			3 - 60 s	24/100-127 24/200-240	24 24	3RP15 76 - 1NQ30 3RP15 76 - 1NP30	0.11

1) 当设定 "∞" 时，无延时功能，仅用于现场检测。
如：检测开关动作性能。
2) 线圈电压工作范围 0.7 ~ 1.25 x U_{s}
3) 线圈电压工作范围 0.85 ~ 1.1 x U_{s}
4) 线圈电压工作范围 0.8 ~ 1.1 x U_{s}
5) 典型线路图，见 4/17 页。

1) With selection of ∞, no timing (NO/OFF function).
For test purposes on site, e.g. testiong of activation without switching.
2) Coil voltage tolerance 0.7 to 1.25 x U_s.
3) Coil voltage tolerance 0.85 to 1.1 x U_s.
4) Coil voltage tolerance 0.8 to 1.1 x U_s.
5) For typical circuits, see page 4/17.

附件 Accessories

功能标牌套装

	类型 Version	功能 Function	字母编码 Code letter	应用 Application	订货号 Order No.	重量(约) Weight approx. kg
	8 功能 Complete set with 8 functions	通电延时 ON-delay	A	用于具备 1 转换触头的时间继电器 for relays with 1 changeover contact	3RP19 01 - 0A	0.02
		带辅助电压的断电延时 OFF-delay with auxiliary voltage	B			
		带辅助电压的通电延时及断电延时 ON-delay and OFF-delay with auxiliary voltage	C			
		间歇开始的闪光 flashing, starting with interval	D			
		短时接通 passing make contact	E			
		带辅助电压的短时分断 passing break contact with auxiliary voltage	F			
		带辅助电压的脉冲成形 pulse shaping with auxiliary voltage	G			
		带辅助电压的辅助通电延时 additive ON-delay with auxiliary voltage	H			
	16 功能 Complete set with 16 functions	通电延时 ON-delay	A	用于具备 1 转换触头的时间继电器 for relays with 1 changeover contact	3RP19 01 - 0B	0.02
		带辅助电压的断电延时 OFF-delay with auxiliary voltage	B			
		带辅助电压的通电延时及断电延时 ON-delay and OFF-delay with auxiliary voltage	C			
		间歇开始的闪光 flashing, starting with interval	D			
		短时接通 passing make contact	E			
		带辅助电压的短时分断 passing break contact with auxiliary voltage	F			
		带辅助电压的脉冲成形 pulse shaping with auxiliary voltage	G			
		带辅助电压的辅助通电延时 additive ON-delay with auxiliary voltage and instantaneous contact	H!			
		通电延时与瞬动 ON-delay and instantaneous contact	A!			
		带辅助电压的断电延时与瞬动 OFF-delay with auxiliary voltage and instantaneous contact	B!			
		带辅助电压的通电延时、断电延时与瞬动 ON-delay and OFF-delay with auxiliary voltage and instantaneous contact	C!			
		间歇开始的闪光与瞬动 flashing, starting with interval and instantaneous contact	D!			
		短时接通与瞬动 passing make and instantaneous contact	E!			
		带辅助电压的短时分断与瞬动 passing break contact with auxiliary voltage and instanta-neous contact	F!			
		带辅助电压的脉冲成形与瞬动 pulse shaping with auxiliary voltage and instantaneous contact	G!			
		星三角转换 star-delta function	*d			

盖板与插脚 /Cap and push-in Plug

	密封罩 Sealable cap	防止无关人员误操作 For securing against misadjustment by unauthorized persons	用于具备 1 转换或 2 转换触头的时间继电器 for relays with 1 or 2 changeover contacts	3RP19 02	
	镙钉固装插脚 Plug-in lug for screw fixing		用于具备 1 转换或 2 转换触头的时间继电器 for relays with 1 or 2 changeover contacts	3RP19 03	

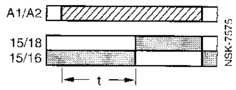
4

3RP19 01-0A 套装功能标牌的功能表 / Function table for 3RP19 01-0A label set

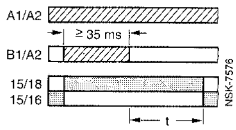
功能 /Function
- 时间继电器通电 /time relay energized (hatched)
- 触头闭合 /contact closed (shaded)
- 触头打开 /contact open (blank)

1 转换触头 /1 changeover contact

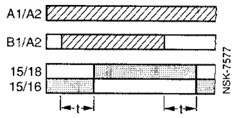
A 通电延时
ON-delay



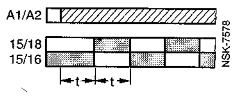
B 带辅助电压的断电延时
OFF-delay with auxiliary voltage



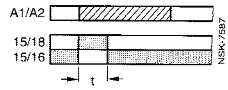
C 带辅助电压的通电延时及断电延时
ON-delay and OFF-delay
with auxiliary voltage
($t = t_{ON} = t_{OFF}$)



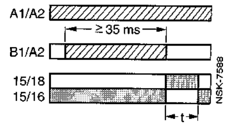
D 间歇开始的闪光 (脉冲间隔电为 1:1)
flashing, starting with interval
(pulse/interval 1:1)



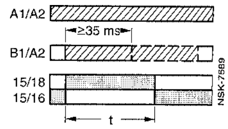
E 短时接通
passing make contact



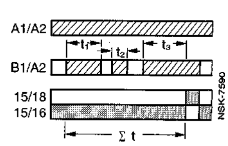
F 带辅助电压的短时分断
passing break contact
with auxiliary voltage



G 带辅助电压的脉冲形成
(输出端脉冲形成与励磁持续时间无关)
pulse shaping with auxiliary voltage
(pulse generation at the output does
not depend on duration of energizing)



H 带辅助电压的辅助通电延时
additive ON-delay with auxiliary
voltage



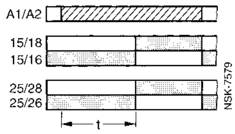
3RP19 01-0B 套装功能标牌的功能表 — Function table for 3RP19 01-0B label set

功能 / Function

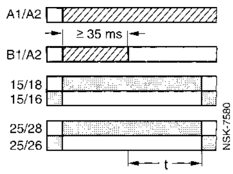
- 时间继电器得电 / time relay energized
- 触头闭合 / contact closed
- 触头打开 / contact open

2 转换触头 / 2 changeover contact

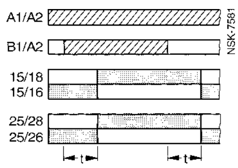
A 通电延时
ON-delay



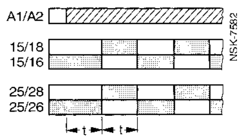
B 断电延时带辅助电压
OFF-delay
with auxiliary voltage



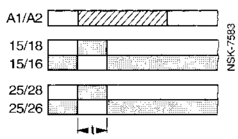
C 通、断电延时带辅助电压
(t = t_{ON} =t_{OFF})
ON-delay and OFF-delay
with auxiliary voltage
(t = t_{ON} =t_{OFF})



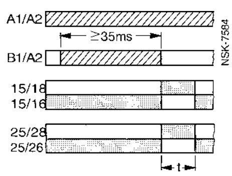
D 闪烁，从间歇开始
(脉冲 / 间歇 1:1)
flashing, starting with interval
(pulse/interval 1:1)



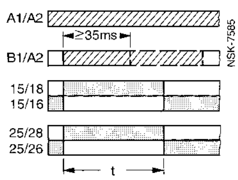
E 短时接通
passing make contact



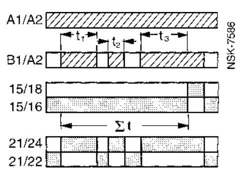
F 带辅助电压的短时分断
passing break contact
with auxiliary voltage



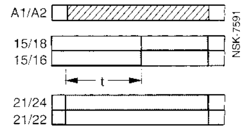
G 带辅助电压的脉冲形成
(输出端脉冲形成与励磁持续
时间无关)
pulse shaping
with auxiliary voltage
(pulse generation at the
output does not depend on
duration of energizing)



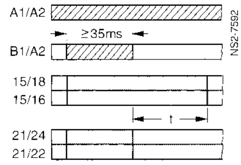
H 带辅助电压的辅助通电延时
additive ON-delay
with auxiliary voltage and
instantaneous contact



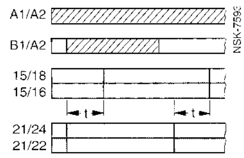
A! 通电延时带短时触点
ON-delay
and instantaneous contact



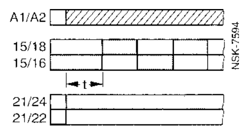
B! 断电延时带辅助电源和短时触头
OFF-delay
with auxiliary voltage and
instantaneous contact



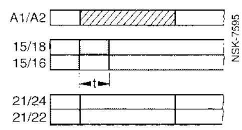
C! 通、断电延时
带辅助电源和瞬动触头
(t = t_{ON} =t_{OFF})
ON-delay and OFF-delay
with auxiliary voltage
and instantaneous contact
(t = t_{ON} =t_{OFF})



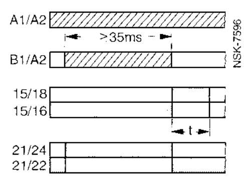
D! 闪烁从间歇开始
(脉冲 / 间歇 1:1)
带短时触头
flashing, starting with interval
(pulse/interval 1:1)
and instantaneous contact



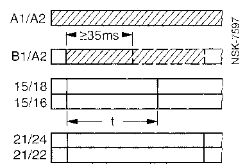
E! 短时接通与瞬动
passing make contact
and instantaneous contact



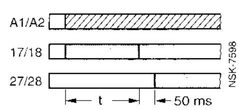
F! 带辅助电压的短时分断与瞬动
passing break contact
with auxiliary voltage
and instantaneous contact



G! 带辅助电压的脉冲形成与瞬动
(输出端脉冲形成与励磁持续时
间无关)
pulse shaping with auxiliary
voltage and instantaneous
contact
(pulse generation at the output
does not depend on duration of
energizing)



***d** 星三角转换
star-delta function



4

技术参数符合 IEC 1812-1/DIN VDE 0435 第 2021 部分 / Technical data to IEC 1812-1/DIN VDE 0435 Part 2021

时间继电器 Time relays	型号 Type	3RP10 00 3RP10 20	3RP15 05 3RP15 31 3RP15 32 3RP15 33	3RP15 11 3RP15 12 3RP15 13 3RP15 25 3RP15 55	3RP15 40	3RP15 74 3RP15 76	3RP15 27
机械寿命 Mechanical endurance	工作次数 Operating cycles	30 . 10^6					100 . 10^6
额定绝缘等级电压 Rated insulation voltage 污染等级 3 / Pollution degree 3 过电压类别根据 DIN VDE 0110 Overvoltage category III acc. to DIN VDE 0110	V AC	300					
允许环境温度 Permissible ambient temperature	°C °C	-25 ~ +60 (工作温度 / during operation) -40 ~ +80 (存储温度 / during storage)					
线圈电压允许范围 Coil voltage tolerance 1)		0.85 to 1.1 x U_s at AC; 0.8 to 1.25 x U_s at DC 0.95 ~ 1.05 额定频率 / 0.95 to 1.05 x rated frequency					
额定功率 230V AC, 50Hz Rated power at 230V AC, 50Hz	W VA	1 4	2 6	2 6	2 2 2)	2 6	1 1
额定工作电流 I_e / Rated operational current I_e at 230V AC, 50Hz	A	3					0.01 ~ 0.5 at AC-140
所需 DIAZED 熔断器 3) 应用类别 Required DIAZED fuse 3) Utilization category gL/gG	A	4					
操作频率 / Operating frequency 230V AC 额定电流下使用 与 3RT10 16 接触器共同使用 230V AC when loaded with I_e, 230V AC when loaded with 3RT10 16 contactor, 230V AC	1/h 1/h	2500 5000					5000 5000
恢复时间 / Recovery time	ms	150 4)					50
最小接通周期 / Minimun ON period	ms	35	35 5)	-	200 6)	-	-
漏电电流 / Residual current 不接线状态 / with non-conducting output	mA						≤ 5
压降 / Voltage drop 接线状态 / with conducting output	V						≤ 3.5
短时耐受能力 Short-time loading capacity	A						10 (up to 10 ms)
设置精度 / Setting accuracy referred to upper limit of scale		typical ±5%					
重复精度 / Repeat accuracy		≤ ±1%					
保护等级 / Degree of protection 根据 DIN EN 60 529 acc. to DIN EN 60 529		IP 20					
导线截面 Conductor cross-sections — 单股线 / solid	mm^2	2 x (0.5 - 1.5) 2 x (0.75 - 4) 7)	1 x (0.5 - 4) 2 x (0.5 - 2.5)				
带芯线盒的细线 finely stranded with end sleeve	mm^2	2 x (0.5 - 2.5)	1 x (0.5 - 2.5) 2 x (0.5 - 1.5)				
单股线和多股线 solid or stranded	AWG	2 x (18 - 14)	2 x (20 - 14)				
端子螺钉 / Terminal screw	Nm	M 3	M 3.5				
紧固扭矩 / Tightening torque		0.8 ~ 1.2					
允许安装位置 Permissible mounting position		any					

1) 如不加说明
2) 最大起动电流 1 A/100ms
3) 无熔焊 - 根据 DIN VDE 0660 200 部分
4) 使用 3RP15 05-1BW30，10 ~ 250ms 与电压有关
5) 用 3RP15 05-1BW30，150ms
6) 操作正确，保护最小接通周期
7) 笼卡接线，数值略有不同

1) If nothing else is stated.
2) Maximum inrush current 1 A/100ms.
3) Weld-free according to DIN VDE 0660 Part 200.
4) With 3RP15 05-1BW30, 10 to 250 ms, voltage-dependent.
5) With 3RP15 05-1BW30, 150ms.
6) For correct operation, observe minimun ON period.
7) With Cage Clamp, differing values.

说明 Description

标准，规范
该时间继电器符合：
- IEC 721-3-3 “ 环境条件 ”
- IEC 1812-1/DIN VDE 0435 2021 部分 “ 电子式继电器，时间继电器 ”
- IEC 1000 “ 电磁兼容性 ”
- IEC 947-5-1; DIN VDE 0660 200部分“ 用于低压机电式控制回路的装置 ”

应用
时间继电器可用于所有需要时间延迟的开关操作场合，包括控制、起动、保护回路。

安装设计
所有的时间继电器均可卡装于符合EN 50 022的35mm 标准导轨上中螺钉安装。

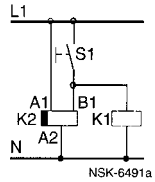
组态
- 只有在无电状态下才能进行时间及功能设定。
- 起动输入端B1或B3，只有在控制电源通电时才动作。
- 必须保持 A1 和 B1，或 A3 和 B3 等电势。
- 3RP10 00 多功能时间继电器，它将通电延时功能固化，无需编码插件。

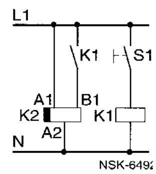
Standards, specifications
The time relays comply with:
- IEC 721-3-3 "Ambient conditions"
- IEC 1812-1/DIN VDE 0435 Part 2021 "Solid-state relays, time relays"
- IEC 1000 "Electromagnetic compatibility"
- IEC 947-5-1; DIN VDE 0660 Part 200 "Low-voltage electromechanical control circuit devices"

Application
Time relays are used in control, starting and protective circuits for all switching operations involving time delays. They guarantee a high repeat accuracy of timer settings.

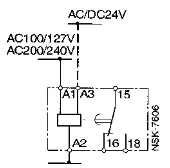
Housing design
All time relays are suitable for snap-on mounting onto 35 mm standard mounting rails according to EN 50 022 or for screw fixing.

Configuration
- Changing the time setting ranges and the functions will only be effective when being carried out in de-energized state.
- Start input B1 or B3 must only be triggered when the supply voltage is applied.
- The same potential must be applied to A1 and B1, or A3 and B3. With the two-voltage version, only one voltage range must be connected.
- The 3RP10 00 multifunction time relay is programmed for ON-delay without coding plugs.
- The activation of loads parallel to the start input is not permissible when using AC (see adjacent diagrams).



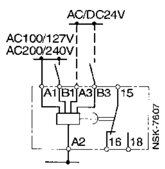


电路图 (端子设计符合 DIN 46 199 第 5 部分) Circuit diagrams (terminal designation to DIN 46 199 Part 5)



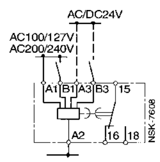
通电延时 / ON-delay

3RP10 00
3RP10 20
3RP15 05-1A
3RP15 1.-1A
3RP15 25-1A



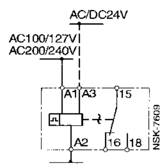
带辅助电压的断电延时
OFF-delay
with auxiliary voltage

3RP10 00
3RP15 05-1A
3RP15 3.-1A



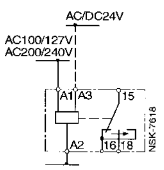
带辅助电压的通电延时与断电延时
ON-delay and OFF-delay
with auxiliary voltage

3RP10 00
3RP15 05-1A



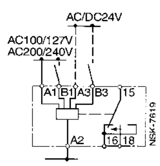
闪光器 / flashing

3RP10 00
3RP15 05-1A



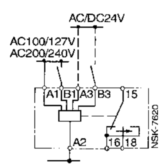
短时接通触头
passing make contact

3RP10 00
3RP15 05-1A



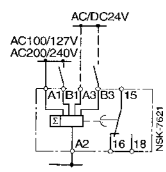
带辅助电压的短时分断触头
passing break contact
with auxiliary voltage

3RP10 00
3RP15 05-1A



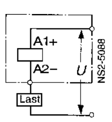
带辅助电压脉冲形成
pulse shaping
with auxiliary voltage

3RP10 00
3RP15 05-1A



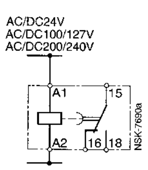
带辅助电压的辅助通电延时
additive ON-delay
with auxiliary voltage

3RP15 05-1A



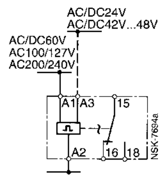
二线式，
通电延时
ON-delay,
two-wire version

3RP15 27



不带辅助电压的断电延时
OFF-delay
without auxiliary voltage

3RP15 40-1A



时钟脉冲
clock-pulse relay

3RP15 55

说明 / Description

7PU 电子式时间继电器，可用于控制线路、起动线路、保护和调节线路中所有的延时开断过程。该时间继电器保证很高的额定时间范围的重复精度。

7PU 时间继电器适合任何气候条件

7PU time relays are used in cotrol, starting and protection circuits for all switching operations involving time delay.
They give a high reproducible accuracy of preset operating times.
The time relays are suitable for use in any climate.

工作条件 / Working conditions

- 适用于所有的工业应用
- 适用于恶劣的环境条件，温度范围可从 -25°C ~ +55°C，并可在控制电压允许范围 0.8 ~ 1.1 x U_s 的条件下持续通电。
- 根据 IEC 255-4，抗冲击电压为 5kV。
- 电子电路不受干扰和破坏的影响。
- 耐振动耐冲击，可直接安装在接触器旁。
- 防护等级为 IP 40，端子防护等级为 IP 20。

- For all industrial applications.
- For rugged ambient conditions at temperatures from -25°C to +55°C and permanent energization with a control voltage 0.8 to 1.1 x U_s.
- Impulse withstand voltage 5kV according to IEC 255-4.
- Electronic circuitry immune against interference and destruction.
- Shock proof for mounting directly next to contactors.
- Degree of protection is IP 40 and IP 20 for the terminals.

安装方式 / Housing type

所有的 7PU 时间继电器都有 22.5mm 和 45mm 的标准外壳，可安装于符合 DIN EN5022 的 35mm 导轨上，也可用螺钉安装。

螺钉固定的 22.5mm 标准外壳的时间继电器可有附加的适配器。

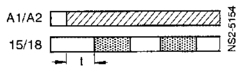
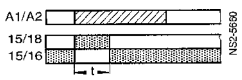
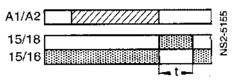
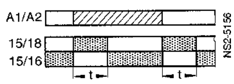
All time relays in 22.5mm and 45mm standard housing are suitable for snapon mounting on 35mm standard mounting rails in accordance to DIN EN 50022 or screw mounting.
For the time relays in 22.5mm standard housing additional adapters are available for screw mounting.

选型与订货数据 / Selection and ordering data

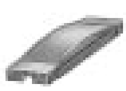
螺钉接线
Screw connection

通常用于控制系统及机械工程领域
For general use in control systems and mechanical engineering

电子式时间继电器 / Solid-state time relays
- 带 1 常开或 1 转换触头
- 带 22.5mm 标准外壳
- with 1 normally open contact or 1 changeover contact
- in 22.5mm standard housing

	类型 / Version	功能 / Function ▨ 通电 time relay energized ▭ 触头闭合 contact closed □ 触头断开 contact open	时间设定范围 Time setting range *t*	额定控制电压 Rated control supply voltage AC 50/60Hz V	DC V	订货号 Order No.	重量 Weight approx. kg
	7PU51 20 闪光器 / 7PU51 20, flasher relay						
 7PU51 20	LED 显示 With LED 输入输出端 绝缘 Input and output isolated 1 常开触头 (半导体) 1 NO contact (semi-conductor) 工作电压： Operational voltage 17…250V AC/DC	闪光(脉冲间歇比 1:1) flashing (pulse/interval 1:1) 	0.2 - 2 s	24 42-48 60 110-127 220-240 - -	24 42-48 60 - - 110-127 220-230	7PU51 20 - 6CB30 7PU51 20 - 6CE30 7PU51 20 - 6CF30 7PU51 20 - 6CJ20 7PU51 20 - 6CN20 7PU51 20 - 6CJ40 7PU51 20 - 6CN40	0.15
	7PU57 20，间歇型时间继电器 / 7PU57 20, interval time-delay relay						
 7PU57 20	通过内置选择开关 可选择功能 Function selectable by built-in rotary switch. 1 CO 触点 短时触点 1 CO contact, passing contact	短时接通触头 passing make contact  短时断开触头 passing break contact  短时接通及断开触头 passing make and break contact 	固定设置 Fixed setting 0.6 s	24 42-48 60 110-127 220-240	24 42-48 60 - -	7PU57 20 - 0AB30 7PU57 20 - 0AE30 7PU57 20 - 0AF30 7PU57 20 - 0AJ20 7PU57 20 - 0AN20	0.15

附件 / Accessories

		订货号 / Order No.	重量 / Weight approx. kg
	螺钉安装适配板 (1 套 = 每个时间继电器 2 块) Adapter for screw fixing (required quantity: 1 set = 2 items per time relay)	7PX99 06	0.01
	密封罩 Sealable cap	7PX99 13	0.01

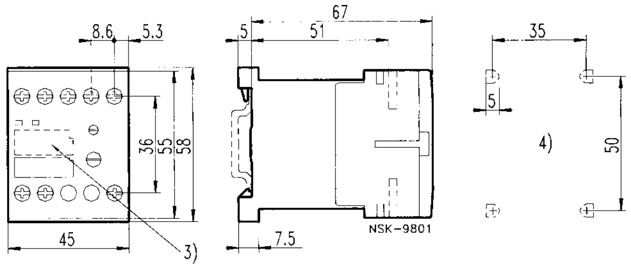
4

技术参数符合 1812-1/DIN VDE 0435 第 2021 部分		Technical data to IEC 1812-1/DIN VDE 0435 Part 2021	
时间继电器 / Time relays	型号 / Type	7PU51 20	7PU57 20
机械寿命 Mechanical endurance	操作循环 Operating cycles	$100 \cdot 10^6$	$30 \cdot 10^6$
额定绝缘电压 Rated insulation voltage	V AC	250	
容许环境温度 Permissible ambient temperature	°C °C	-25 ~ +55 (工作温度 / during operation) -40 ~ +85 (存储温度 / during storage)	
线圈电压允许范围 Coil voltage tolerance [1])		0.8 ~ 1.1 x Us 0.95 ~ 1.05 x 额定频率 / 0.95 to 1.05 x rated frequency	
额定功率 / Rated power (功率消耗 / power consumption) 230V AC, 50Hz	 W VA	 < 2 3.5	 6
额定工作电流 Rated operational current 漏电电流 / Residual current 接线时的压降 Voltage drop with conducting output	A mA V	0.01 ~ 0.8 [2]) [4]) 0.01 ~ 0.4 [3]) [4]) ≤ 1 ≤ 4	3 (AC-15 at 230V)
短时耐受能力 Short-time loading capacity		2 A up to 20ms, 4 A up to 10ms	-
所需 DIAZED 熔断器 [5]) 应用类别 Required DIAZED fuse [5]) Utilization category gL/gG	A	-	
操作频率 / Operating frequency 230V AC 额定电流下使用 与 3TH4 共同使用 230V AC when loaded with I_e, 230V AC when loaded with 3TH4 conductor, 230V AC	 1h 1h	 9000 9000	 2500 5000
设置精度 / Setting accuracy referred to upper limit of scale		± 5%	± 30%
恢复时间 Returning time / recovery time 操作中 / during operation 操作后 / after operation	 ms ms	 150 150	 200 (带短时接通触头 with passing make contact)
最小接通周期 Minimum signal duration for seal-in or minimum ON period	ms	-	400 (带短时分断触头 with passing break contact)
保护等级根据 DIN EN 60 529 Degree of protection acc. to DIN EN 60 529		IP 40, terminals IP 20	
导线截面 Conductor cross-sections 单股线或多股线 solid or finely stranded solid 带芯线套的细线 finely stranded (also with end sleeve)	mm^2 mm^2	min. 0.5 max. 2 x 2.5 max. 2 x 1.5	
允许安装位置 Permissible mounting position 防震 / Shock resistance 半正弦波，根据 IEC 68 Half-sine acc. to IEC 68	 g/ms	any 15/11	

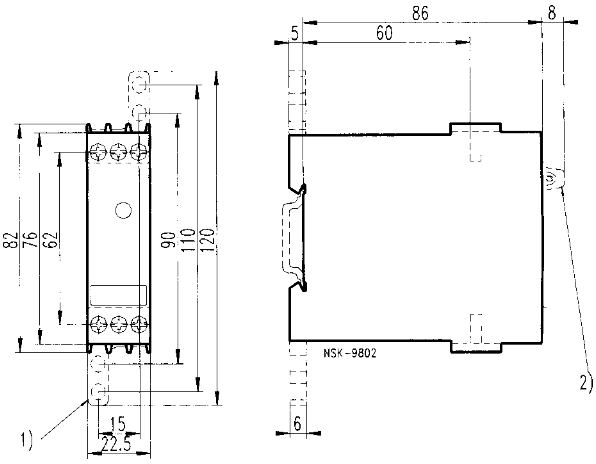
1) 如无其他说明
2) 针对 AC, DC 阻性负载及带干扰抑制的 DC 感性负载
3) 不带干扰抑制的 DC 感性负载
4) 控制电压为 220/230V DC 时，表中运行电流应当减半
5) 无熔焊，根据 IEC 947-5-1

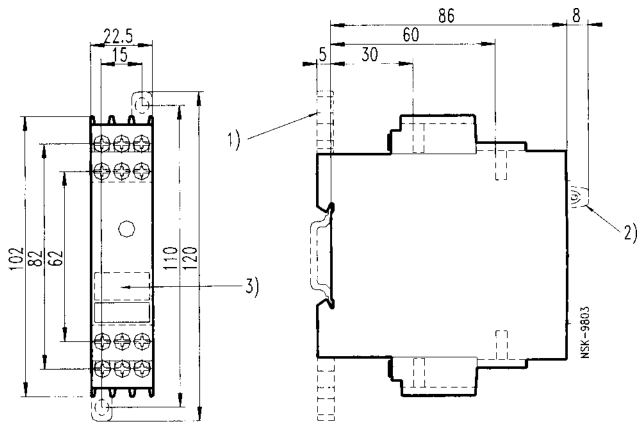
1) If nothing else is stated.
2) For AC, DC resistive load and DC inductive load with interference suppression diode.
3) For DC inductive load without interference suppression diode.
4) With rated control voltage 220/230V DC, the indicated rated operational currents are halved.
5) Weld-free acc. to IEC 947-5-1.

尺寸图　　Dimensions drawings



3RP10 时间继电器
3RP10 time relay



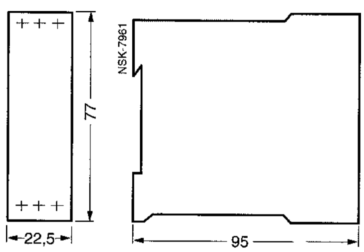


3RP15 时间继电器 / 3RP15 time relay
1 CO 触点，不带辅助电压，2 线方式，时钟脉冲继电器
1 CO contact without auxiliary voltage, two-wire version, clock-pulse relay

3RP10 时间继电器 / 3RP10 time relay
1 CO 触点，带辅助电压，2 CO 触点
1 CO contact with auxiliary voltage, 2 CO contacts

1) 按入式线鼻用于螺丝固定
2) 可封闭式盖板
3) 编码插件 (3RP10) 或标签 (3RP15)
4) 钻孔方式

1) Push-in lug for screw fixing.
2) Sealable cap.
3) Coding plug (3RP10) or label (3RP15).
4) Drilling pattern.

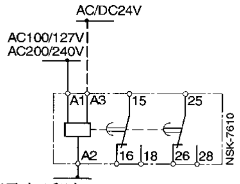


7PU51 20 闪烁式继电器
7PU57 20 间歇延时式继电器
螺丝固定带 7PX9 906 螺丝紧固件

7PU51 20 flasher relay,
7PU57 20 interval time-delay relay
screw fixing with 7PX9 906 screw adapter

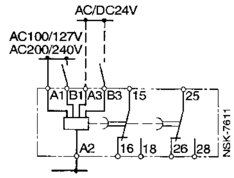
4

电路图 (端子设计符合 DIN 46 199 第 5 部分)　Circuit diagrams (terminal designation to DIN 46 199 Part 5)



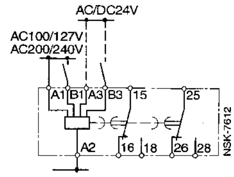
通电延时
ON-delay
3RP15 05-1B
3RP15 25-1B

3RP15 25-1B also
for 42...48/60V AC/DC



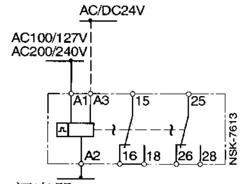
带辅助电压的断电延时
OFF-delay
with auxiliary voltage

3RP15 05-1B



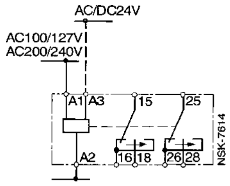
带辅助电压的通电延时与断电延时
ON-delay and OFF-delay
with auxiliary voltage

3RP15 05-1B



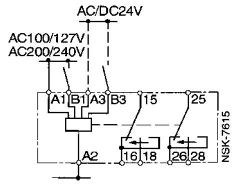
闪光器
flashing

3RP15 05-1B



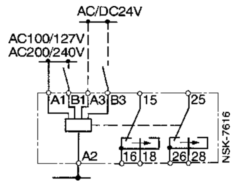
短时接通触头
passing make contact

3RP15 05-1B



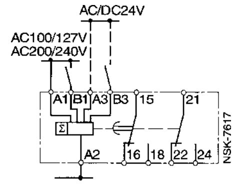
带辅助电压的短时分断触头
passing break contact
with auxiliary voltage

3RP15 05-1B



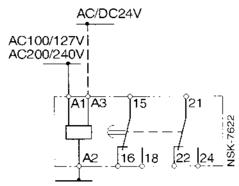
带辅助电压的脉冲形成
pulse shaping with auxiliary
voltage

3RP15 05-1B



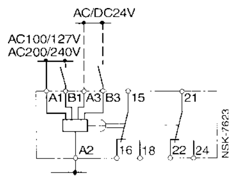
带辅助电压的辅助通电延时与
瞬动触头
additive On-delay with auxiliary
voltage and instantaneous
contact

3RP15 05-1B



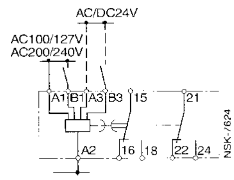
通电延时与瞬动触头
ON-delay and instantaneous
contact

3RP15 05-1B



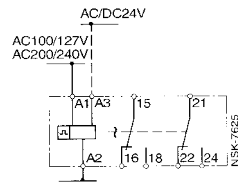
带辅助电压的断电延时与瞬动触头
OFF-delay
with auxiliary voltage and
instantaneous contact

3RP15 05-1B



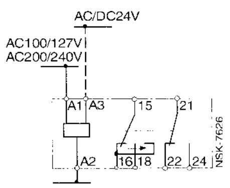
带辅助电压的通电延时与断电延时
及瞬动触头
ON-delay and OFF-delay
with auxiliary voltage and
instantaneous contact

3RP15 05-1B



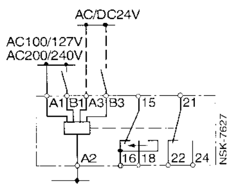
闪光器与瞬动触头
flashing and instantaneous
contact

3RP15 05-1B



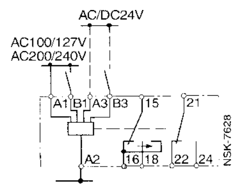
短时接通触头与瞬动触头
passing make contact and
instantaneous contact

3RP15 05-1B



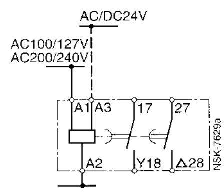
带辅助电压的短时分断触头与瞬动
触头
passing break contact
with auxiliary voltage and
instantaneous contact

3RP15 05-1B



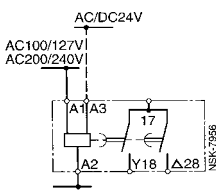
带辅助电压的脉冲形成与瞬动触头
pulse shaping
with auxiliary voltage and
instantaneous contact

3RP15 05-1B



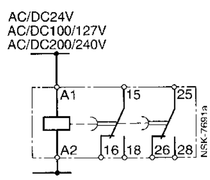
星三角转换
star-delta function

3RP15 05-1B



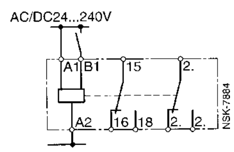
星三角时间继电器
star-delta time relays

3RP15 74, 3RP15 76



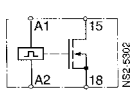
不带辅助电压的继电延时
OFF-delay
without auxiliary voltage

3RP15 40-1B



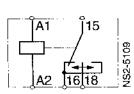
多功能时间继电器
multifunction relays

3RP15 05-1BW30



闪光器
flasher relays

7PU51 20



间歇式时间继电器
interal time-delay relays

7PU57 20

3TH3, 3TH4 和 3TH8 中间继电器 / 3TH3, 3TH4 and 3TH8 Contactor relays,

I_e/AC-15; 4A, 230/220V







3TH30 页号 Page

4 极，可插装辅助触头座 / 4-pole with plug-on auxiliary contact blocks

3TH40/3TH80 页号 Page

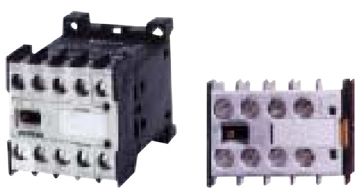
4 极，完整型 / 4-pole complete

3TH42/3TH82 页号 Page

8 极，完整型 / 8-pole complete

3TH2 SIMICONT 中间继电器 / 3TH2 SIMICONT Contactor relays,

I_e/AC-15; 4A, 230/220V







3TH20

4 极,可插装辅助触头座 / 4-pole with plug-on auxiliary contact blocks

交流，直流操作
AC, DC operation
螺钉固定或导轨安装
For screw or snap-on mounting onto 35mm standard mounting rail

详情请向就近西门子办事处查询
For details, please inquire to Siemens Representatives

3TH22

8 极，双层，完整型 / 8-pole, two tier, complete

交流，直流操作
AC, DC operation
螺钉固定或导轨安装
For screw or snap-on mounting onto 35mm standard mounting rail

详情请向就近西门子办事处查询
For details, please inquire to Siemens Representatives

3TH27

4 极，机械联锁式 / 4-pole with mechanical latching

交流，直流操作
AC, DC operation
螺钉固定或导轨安装
For screw or snap-on mounting onto 35mm standard mounting rail

详情请向就近西门子办事处查询
For details, please inquire to Siemens Representatives

说明 Description

3TH系列中间继电器，适用于交流50Hz或60Hz，电压至660V和直流电压至600V的控制电路中，用来控制各种电磁线圈及作为电信号的放大和传递，符合IEC947, VDE0660, GB14048等标准。

3TH Series Contactor Relays are suitable for control circuits with frequency of 50/60Hz, rated AC voltage up to 660V and rated DC Voltage up to 600V. They can control all kinds of magnetic coils to amplify and transfer signals. They comply with IEC947, VDE0660, GB14048.

工作条件 Operating Conditions

- 海拔高度不超过 2000 米；
- 周围环境温度：-25 ~ +55ºC
- 空气相对湿度：+25ºC 时不超过 90%;
- 大气条件：没有会引起爆炸危险的介质，也没有腐蚀金属和破坏绝缘的气体和导电尘埃；
- 在无显著摇动和冲击振动的地方；
- 在没有雨雪侵袭的地方。

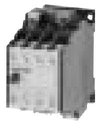
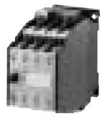
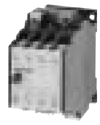
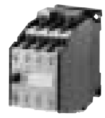
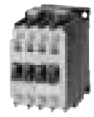
- The altitude of the site of installation does not exceed 2000 meters above sea levels.
- The ambient air temperature: -25 ~ +55ºC.
- Relative humidity does not exceed 90% at +25ºC.
- Atmospheric conditions: the air does not contain any explosive medium, corrosive gases and conductive dust.
- Never be shocked and vibrated obviously.
- Never be wetted by rain and snow.

结构特点 Features

- 继电器采用 E 形铁心，双断点桥式触头系统的直动式运动结构，动作可靠；
- 3TH40, 80 有四对触头可组合；
  3TH42, 82 有八对触头可组合；
  3TH30 可接插辅助触头座(3TX4), 可自由组合；
- 继电器动作机构灵活，手动检查方便，结构设计紧凑，可防止外界杂物及灰尘落入继电器的活动部位。接线端都有罩覆盖，人手不能直接接触带电部位，安全防护性很高；
- 继电器外型尺寸巧，安装面积小。安装方式可用螺钉坚固，也可扣装在35毫米宽的标准导轨上，具有装卸迅速方便之优点；
- 触头为桥式双断点结构，触头材料由电性能优越的银合金制成，具有使用寿命长及良好的接触可靠性。灭弧室均呈封闭型，并由阻燃性材料阻挡电弧向外喷溅，保证人身及邻近电器的安全；
- 继电器电磁铁工作可靠、损耗小、噪音小、具有很高的机械强度，线圈的接线端装有电压规格标志牌，标志牌按电压等级著有特定的颜色，清晰醒目，接线方便，可避免因接错电压规格而导致线圈烧毁。

- The relays consist of core in the form of letter “E” and a straight motion mechanism having a bridge double - breaking system. It operates reliably.
- 3TH40, 80 have 4 pairs of contacts to be arranged.
  3TH42, 82 have 8 pairs of contacts to be arranged.
  3TH30 can plug in auxiliary contacts (3TX4), and can be arranged freely.
- Designed compactly and sensitively, the relays are easy to handle and manually check. Impurities and dust can be prevented from coming into moving parts of the relays. All terminals and other alive parts are covered with insulators to ensure safety use.
- The overall size of the relays and their installation area are small. They can be mounted by screws or snapped on 35mm top-hat, standard rail. This will save much time and labour costs.
- Contact system has a bridge double - breaking structure. Because all contacts are made of silver alloy which provides excellent electrical performance, they have advantages of long endurance and good contact reliability. The arc chute is enclosed and can prevent the arc from spraying out by fire - resistant material to ensure personal and adjacent apparatus’ safety.
- The magnetic system of the relays acts reliably with little loss and noise, but highest mechanical strength. A marked plate of voltage dated with a given color according to different voltage levels is fixed at the terminal of the coil. This clear marked plate is helpful to connecting operation and can prevent coil from burning out due to maloperation at false voltage values.

选型与订货数据 Selection and ordering data

交流操作 AC operation		 3TH80	 3TH82	 3TH40	 3TH42	 3TH30
订货号 Order No.		3TH80 40 - 0X 3TH80 31 - 0X 3TH80 22 - 0X 3TH80 13 - 0X 3TH80 04 - 0X	3TH82 80 - 0X 3TH82 71 - 0X 3TH82 62 - 0X 3TH82 53 - 0X 3TH82 44 - 0X	3TH40 40 - 0X 3TH40 31 - 0X 3TH40 22 - 0X 3TH40 13 - 0X 3TH40 04 - 0X	3TH42 80 - 0X 3TH42 71 - 0X 3TH42 62 - 0X 3TH42 53 - 0X 3TH42 44 - 0X	3TH30 40 - 0X 3TH30 31 - 0X 3TH30 22 - 0X
额定绝缘电压(V) Rated insulation voltage		660	660	690	690	690
额定工作电流(A) (380V) Rated operational current (380V)	AC - 15 (AC - 11)	6	6	6	6	6
	DC - 13 (DC - 11)	0.25	0.25	0.25	0.25	0.25
机械寿命(x10⁶) Mechanical endurance		15	15	30	30	30
电寿命(x10⁶) Electrical endurance	AC - 15 (AC - 11)	1.2	1.2	1.2	1.2	1.2
操作频率(1/h) Switching frequency	AC - 3	1000	1000	1000	1000	1000
	AC - 15 DC - 13	3600	3600	3600	3600	3600
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)		$(0.8\sim1.1)U_s$				

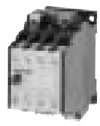
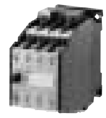
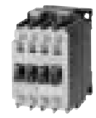
线圈电压订货号
Order No. suffixes for rated control voltages for coils

3TH3···-0X □□
3TH4···-0X □□
3TH8···-0X □□

50Hz 线圈 / Coils for 50Hz 50Hz	60Hz		60Hz 线圈 / Coils for 60Hz 60Hz	50Hz		50/60Hz 线圈 / Coils for 50/60Hz	
24V	29V	B0	24V	20V	C1	24V	C2
32V	38V	C0	110V	92V	G1	42V	D2
36V	42V	G0	115V	96V	J1	110V	G2
42V	50V	D0	120V	100V	K1	115V	J2
48V	58V	H0	208V	173V	M1	120V	K2
60V	72V	E0	220V	183V	N1	208V	M2
110V	132V	F0	230V	192V	L1	220V	N2
125/127V	150/152V	L0	240V	200V	P1	230V	L2
220V	264V	M0	440V	367V	R1	240V	P2
230V	277V	P0	575V	480V	S1	440V	R2
240V	288V	U0				575V	S2
380V	460V	Q0					
400V	480V	V0					
415V	500V	R0					
500V	600V	S0					

		3TH80	3TH82	3TH40	3TH42	3TH30
吸引线圈功率消耗 Power consumption of coil (50Hz)	保持(VA) / Closed	10	10	10	10	10
	功率因数 p.f.	0.29	0.29	0.29	0.29	0.29
	吸合(VA) / Closing	68	68	68	68	69
	功率因数 p.f.	0.82	0.82	0.82	0.82	0.82
约定发热电流(A) Conventional thermal current		16	16	16	16	16

选型与订货数据 Selection and ordering data

直流操作 DC operation		 3TH40	 3TH42	 3TH30
订货号 Order No.		3TH40 40 - 1X 3TH40 31 - 1X 3TH40 22 - 1X 3TH40 13 - 1X 3TH40 04 - 1X	3TH42 80 - 1X 3TH42 71 - 1X 3TH42 62 - 1X 3TH42 53 - 1X 3TH42 44 - 1X	3TH30 40 - 1X 3TH30 31 - 1X 3TH30 22 - 1X
额定绝缘电压(V) Rated insulation voltage		690	690	690
额定工作电流(A) (380V) Rated operational current (380V)	AC - 15 (AC - 11)	6	6	6
	DC - 13 (DC - 11)	0.25	0.25	0.25
机械寿命 (x10⁶) Mechanical endurance		30	30	30
电寿命 (x10⁶) Electrical endurance	AC - 15 (AC - 11)	参见技术数据 6/4; See technical data on 6/4.		
操作频率(1/h) Switching frequency	AC - 3	1000	1000	1000
	AC - 15 DC - 13	3600	3600	3600
吸引线圈工作电压范围(AC) Coil voltage tolerance (AC)		$(0.8\sim1.1)U_s$		

线圈电压订货号 Order No. suffixes for rated control voltages for coils 3TH3···-1X □□ 3TH4···-1X □□																
额定控制电压	Rated control voltage V DC	12	21.5	24	30	36	42	48	60	110	125	180	220	230	240	250
订货号	Order No. suffix	A4	U4	B4	C4	V4	D4	W4	E4	F4	G4	K4	M4	P4	Q4	N4

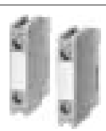
		3TH40	3TH42	3TH30
吸引线圈功率消耗 Power consumption of coil (50Hz)	吸合和保持(W) Closing and closed	6.2	6.2	6.2
约定发热电流(A) Conventional thermal current		16	16	16

辅助触头座 Auxiliary contact blocks

当需要外加辅助触头时，可选用 3TX4 辅助触头座。(请注意：中间继电器中只有 3TH30 可使用 3TX4)。

3TH30 型中间继电器上最多可插装 4 个 3TX4 型辅助触头座，详细参数见 3TF 交流接触器一章。

When additional contacts are needed 3TX4 type auxiliary contacts can be selected.
(Please pay attention to: only 3TH30 can use 3TX4).
Up to 4 auxiliary contact blocks can be plugged onto the 3TH30 basic unit. For detail of 3TX4, refer to chapter 3TF AC contactors.

型号 Type	订货号 Order No.	NO	NC
 3TX4	3TX40 10 - 2A	1	-
	3TX40 01 - 2A	-	1
	3TX40 10 - 3A*	1	-

＊3TX4010 - 3A 带开关位置指示
＊3TX4010 - 3A with switch position indicator.

触头组合形式 Contact arrangements

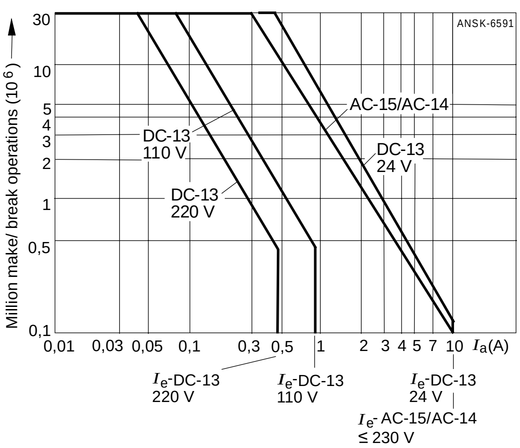
型号 Type		结构 Structure	常开触头数 NO	常闭触头数 NC
3TH40 04	3TH80 04	单层 One tier	0	4
3TH40 13	3TH80 13		1	3
3TH40 22	3TH80 22		2	2
3TH40 31	3TH80 31		3	1
3TH40 40	3TH80 40		4	0
3TH42 44	3TH82 44	双层 Two tier	4	4
3TH42 53	3TH82 53		5	3
3TH42 62	3TH82 62		6	2
3TH42 71	3TH82 71		7	1
3TH42 80	3TH82 80		8	0
3TH30 40		单层 One tier	4	0
3TH30 31			3	1
3TH30 22			2	2

型号说明 Explanation of MLFB

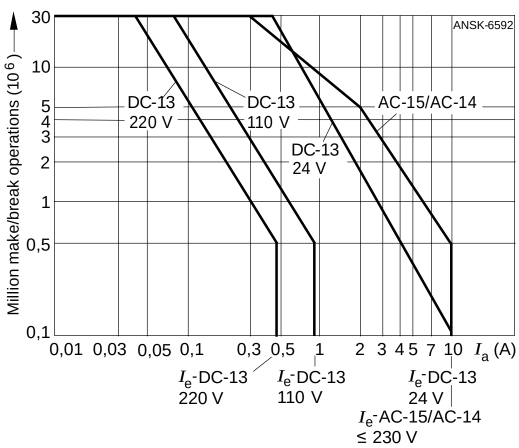
3TH □□ □□ – □□

- 线圈电压种类代号：0X －交流　1X －直流 / Code of coil's voltages: 0X - AC, 1X - DC
- 常闭触头对数 / Number of NC contacts
- 常开触头对数 / Number of NO contacts
- “ 30 ”、“ 40 ”、“ 80 ” 表示共 4 对触头；“ 42 ”、“ 82 ” 表示共 8 对触头
  30, 40, 80 indicate 4 pairs of contacts. 42, 82 indicate 8 pairs of contacts
- 中间继电器 / Contactor relays

技术数据 Technical data

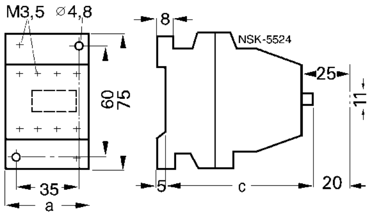


3TH3

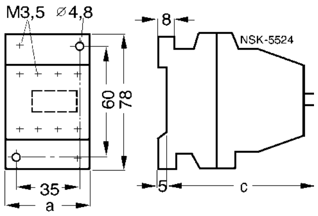


3TH4

外型及安装尺寸(mm) Dimension drawings

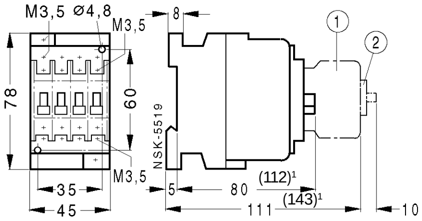


型号/ Type	a	c	(c)[1]
3TH80	45	80	(115)
3TH82	45	95	(130)



型号/ Type	a	c	(c)[1]
3TH40	45	81	(115)
3TH42	45	97	(130)

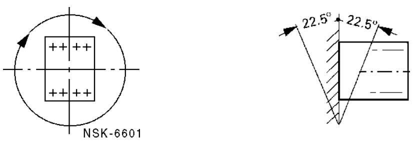
( )[1] 直流操作
DC operation



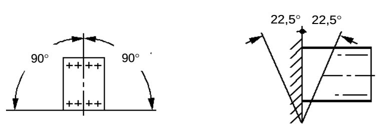
3TH30
① 3TX4 型辅助触头座，带有开关位置指示。
Auxiliary block with switch position indicator.
② 3TX4 标签
3TX label

安装位置 Permissible mounting positions

继电器必须安装在如下图所示的垂直表面上。
The contactor relays are designed for operation on a vertical mounting surface.



交流操作：
AC operation



直流操作：
DC operation

3RW22 SIKOSTART 电子式三相异步电动机软起动器，具有软起动，软停止，节能和直流制动功能
3RW22 SIKOSTART Electronic motor controllers for smooth start and slowing down, energy saving and DC braking of 3-phase asynchronous motors



3RW22..-. up to 1200 A — 页号 Page

3RW34 SIKOSTART 电子式三相异步电动机软起动器，具有软起动，软停止功能
3RW34 SIKOSTART Electronic motor controllers for smooth start and slowing down of 3-phase asynchronous motors



3RW34..-0DC.. up to 1050 A — 页号 Page

SIRIUS 3R 电子式三相异步电动机软起动器，具有软起动，软停止功能
SIRIUS 3R Electronic motor controllers for smooth start and slowing down of 3-phase asynchronous motors



3RW30..-1.B..用于单速电动机
3RW30..-1B..for motors with single speed — 页号 Page



3RW31..-1CB..用于双速电动机
3RW31..-1CB.. for motors with two speeds — 页号 Page

说明 / Description

IEC 947 UL/CSA (对于 3RW22 21 至 3RW22 31)

应用

SIKOSTART电子式电动机软起动器适于控制软起动和停止，以及三相感应式电动机的节能运行和制动。

服务范围

- 泵，压缩机
- 风扇
- 传送带
- 粉碎机，轧机
- 搅拌设备
- 研磨设备
- 拉线机，纺织机械
- 冲压机
- 机床
- 其他

特点：

3RW22 SIKOSTART 紧凑型软起动器有下列使用特点：

- 带突跳脉冲，电压斜坡，限压或限流以及根据不同负荷而将这三者做不同组合的平滑起动
- 起动电压，斜坡时间等起动参数可有多种设置。
- 斜坡检测
- 节能运行
- 4 种可选择的停机方式：自由停机，泵停止，平滑停机，直流制动。
- 电子过载保护
- 防止温升过高的保护
- 通过电位计和滑动开关或 COM SIKOSTART PC 程序进行设置
- 用来精确设置参数及控制和观测的微机通讯接口
- 易于电机馈线相匹配
- 安装和调试简单
- 可以自动运行
- 五种运行状态和五种故障信号的显示
- 系统电压 200 至 690V，50/60Hz
- 能提供三种控制电压的内集成电源单元
- 最高适应温度 55ºC
- 通过选择低环境温度提高负荷能力

建议：

3RW 电子式电机软起动器是为正常起动设计的，需要重载起动或增加起动频率时，需选用更大的起动器单元。

为了精确的选型，必须考虑特殊起动条件(例如，直接起动的时间和电流)。如果需要，当起动时间很长时，必须选择重载起动的过载继电器。推荐使用 PTC 热敏电阻检测器。

对平滑停机，泵停机和直流制动方式一定要进行监测。除了自由停机方式，以上三种停机方式都会产生一个额外的电流负荷。

在SIKOSTART和电动机之间不应包括容性元件(例如, 功率因数补偿装置)。

主电路的所有元件(例如熔断器, 开关设备和过载继电器)应按直接起动和负载短路条件设计选型。熔断器，开关设备和过载继电器需另外订货。

IEC 947 UL/CSA for 3RW22 21 to 3RW22 31

Application

The SIKOSTART solid-state motor starters are suitable for the controlled soft starting and running down, for the braking and the energy-saving operation of three-phase induction motors.

Service range

- Pumps, compressors
- Fans
- Conveyor belts
- Breakers, mills
- Stirring apparatus
- Grinding machines
- Wire-drawing machines, textile machines
- Presses
- Machine tools
- Additional functions

Features

The 3RW22 SIKOSTART compact starters have the following service properties:

- Smooth starting with breakaway impulse, voltage ramp, voltage or current limiting as well as any combination from them, according to load type.
- Varied setting facilities of the starting parameters as starting voltage, ramp time etc.
- Energy-saving duty
- Four running - down modes selectable: free running down, pump running down, smooth running down, DC braking
- Solid-state overload protection
- Protection against temperature rise
- Setting via potentiometer and slide switch or via PC program COM SIKOSTART
- Interface for communication with PC for exact setting of parameters as well as for controlling and observing
- Simple adaptation for the motor feeder
- Simple mounting and commissioning
- Automatic operation possible
- Display of 5 operating states and 5 fault signals
- System voltages from 200 to 690V, 50/60Hz.
- Integrated power supply unit for three control supply voltages
- Applicable up to +55ºC
- Higher load ratings by selecting low ambient temperatures

Advice

The 3RW solid-state motor starters are designed for normal starting. In the case of heavy starting or increased starting frequency, a larger unit must be selected.

For an exact dimensioning, the special starting conditions (e.g. direct-on-line starting time and current) must be observed.

If necessary, an overload relay for heavy-starting must be selected where long starting times are involved. PTC thermistor detectors are recommended.

This must be also observed with the running-down modes smooth running down, pump running down and DC braking. In these cases an additional current load is effective compared with a free running down.

No capacititve elements (e.g. correction equipment) may be contained in the motor feeder between SIKOSTART and the motor.

All elements of the main circuit (e.g. fuses, switching devices and overload relays) should be dimensioned for direct starting, following the load short-circuit conditions.

Fuses, switching devices and overload relays must be ordered separately.

说明 / Description

3RW22 SIKOSTART 使用手册和 PC 选型程序
对于特殊起动条件下的选型，下列参数是需要的：
• 电动机数据
• 负载数据：转动惯量，需要输出功率，速度
• 机器和电动机的转矩 / 速度特性
• 直接起动时，电动机的电流 / 速度特性
• 需要的起动频率
• 负载周期：起动，运行和暂停时间

PC选型程序为进行上述这些选择提供帮助，该程序可以和使用手册一起获得。除设计，调试和使用的重要信息外，使用手册还包括推荐电路和所有起动器技术数据。

3RW22 SIKOSTART 使用手册带 PC 选择程序
德语
订货号：E20001-P285-A485-V3

英语
订货号：E20001-P285-A485-V2-7600

西班牙语
订货号：E20001-P285-A485-V2-7800

3RW22 SIKOSTART 使用手册不带 PC 选择程序
德语
订货号：E20001-P285-A484-V3

英语
订货号：E20001-P285-A484-V2-7600

西班牙语
订货号：E20001-P285-A484-V2-7800

电子保护单元，RS 232 PC 串行接口和 COM SIKOSTART PC 通讯程序

除了电子保护单元，该起动器还有一个微机通讯接口。借助 COM SIKOSTART PC程序，可以通过PC或笔记本电脑对SIKOSTART 3RW22进行参数设置，控制和监测。

参数可以输入并储存在PC中，当驱动具有同样参数要求的电机时，可以重复调用该参数。与使用电位计比较起来，参数可以更精确地设置，并且互不影响。

SIKOSTART 3RW22中可存入两或三组参数，因此，这些起动器适用于双星形和变极电机，风能系统以及带不同负载或不同功率电机的顺序起动。

Manual and PC selection program for 3RW22 SIKOSTART
The following are need for selection in the case of special starting situations:
• motor data
• Load data: moment of inertia, required output, speed
• Torque/speed characteristic of the machine and the motor
• Current/speed characteristic of the motor in the event of direct starting
• Required starting frequency
• Load cycles: starting, operating and pause time

The PC program provides assistance in making these selections. It is obtainable together with the manual. Besides containing all important information on planning, commissioning and servicing, the manual also contains suggested circuits and the technical data for all units.

Manual and PC selection program for 3RW22 SIKOSTART
German
Order No.:E20001-P285-A485-V3
English
Order No.:E20001-P285-A485-V2-7600
Spanish
Order No.: E20001-P285-A485-V2-7800

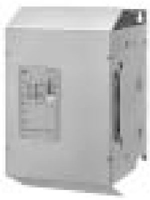
Manual without PC selection program for 3RW22 SIKOSTART
German
Order No.: E20001-P285-A484-V3
English
Order No.: E20001-P285-A484-V2-7600
Spanish
Order No.: E20001-P285-A484-V2-7800

Solid-state unit protection, serial RS 232 PC interface and COM SIKOSTART PC communication program
Besides featuring solid-state unit protection, this version also has a PC interface for communication.
Together with the PC program COM SIKOSTART, it enables simple parameter definition, control and observation of SIKOSTART 3RW22 via a PC or a notebook.
Once entered, a parameter set can be stored in the PC and then retrieved when defining the parameters of a unit with the same kind of drive.
Parameters can be entered more exactly and independently of one another than when using the potentiometers.
It is also possible to store two or three parameter sets in the SIKOSTART 3RW22.
Thus, the units are excellently suitable for use with Dahlander and reversible-pole motors, wind energy systems and for serial starting of motors with different outputs or loads.

选型及订货数据 Selection and ordering data



3RW22 26~3RW22 31



3RW22 34~3RW22 41

额定工作电压 U_e Rated operating voltage U_e V	环境温度 At ambient temperature 40ºC 额定工作电流 I_e Rated operational current I_e A	三相电动机的额定功率 Rated outputs of three-phase motors at 230V KW	at 400V KW	at 500V KW	55ºC 额定工作电压 I_e Rated operating current I_e A	三相电动机的额定功率 Rated outputs of three-phase motors at 230V KW	at 400V KW	at 500V KW	订货号 Order No.	大约重量 Weight approx kg
带电子保护单元和 RS 232 串行接口 / With solid-state unit protection and RS 232 serial interface										
200	7	1.5	3	4	5.5	1.1	2.2	3	3RW22 21-1AB15	1.5
至 500	10.5	2.2	4	5.5	9	2.2	4	5.5	3RW22 23-1AB15	2.9
	22	5.5	11	15	16	4	7.5	11	3RW22 25-1AB15	2.9
200	28	7.5	15	18.5	22	5.5	11	15	3RW22 26-1AB15	3.4
to 500	35	10	18.5	22	32	7.5	15	22	3RW22 27-1AB15	4.8
	45	11	22	30	37	11	18.5	24	3RW22 28-1AB15	4.8
	50	15	25	37	45	12	22	30	3RW22 30-1AB15	8.1
	70	18.5	37	45	63	18.5	30	45	3RW22 31-1AB15	8.1
	100	30	55	75	85	22	45	55	3RW22 34-0DB15	14
	135	37	75	90	110	37	55	75	3RW22 35-0DB15	14
	160	45	90	110	140	45	75	90	3RW22 36-0DB15	16
	235	75	132	160	205	55	110	132	3RW22 38-0DB15	19
	300	90	160	200	250	75	132	160	3RW22 40-0DB15	19
	355	110	200	250	300	90	160	200	3RW22 41-0DB15	19
带电子保护单元和 RS 232 串行接口,适用于 160kW~710kW 电动机(额定工作电压 400V 时) With solid-state unit protection and RS 232 serial interface for motors from 160kW to 710kW (at 400V rated operating voltage)										
200	450	132	250	-	355	110	200	-	3RW22 42-0DB14	44
至 415	560	160	315	-	450	132	250	-	3RW22 43-0DB14	44
200	700	200	400	-	560	160	315	-	3RW22 45-0DB14	45
to 415	865	300	500	-	700	200	400	-	3RW22 47-0DB14	75
	1200	400	710	-	1000	315	560	-	3RW22 50-0DB14	104
200 至 500 根据需要可	450	132	250	315	355	110	200	250	3RW22 42-0DB15	44
至 690	560	160	315	400	450	132	250	315	3RW22 43-0DB15	44
200 to 500	700	200	400	500	560	160	315	400	3RW22 45-0DB15	45
(690 on	865	300	500	630	700	200	400	500	3RW22 47-0DB15	75
request)	1200	400	710	850	1000	315	560	710	3RW22 50-0DB15	104
1000	160	200			140	160			3RW22 36-0DB18	19
	300	400			250	315			3RW22 40-0DB18	44
	450	630			355	450			3RW22 42-0DB18	44

附件 Accessories

	订货号 Order No.		订货号 Order No.
PC 通讯程序 COM SIKOSTART 经 RS 232 串行接口通讯,软盘格式 $3^1/_2$" (德文、英文、法文、意大利文、西班牙文、瑞典文可选) PC communication program COM SIKOSTART User interface for PC communication via RS 232 serial interface in German, French, Italian, Spanish and Swedish. Disk format ($3^1/_2$")	3RW27 01-0AA00	电缆 用于 PC 通讯，5 米长 Cable for PC communication, 5m long	3RW29 20-1DA00
		外壳 防护等级 IP54 用于 3RW22 23~3RW22 31 Housing for IP54 degree for protection for 3RW22 23 to 3RW22 31	3RW29 20-0AB00

技术数据		Technical data
概要 General		
气候条件 Climatic conditions		SN 29070 第 1 部分，气候等级 J2　SN 29070 Part 1, Climatic class J2
机械条件　抗振动 Mechanical conditions; Shock resistance		SN 29010，恶劣度 13　按照 IEC 68-2-87 标准 SN 29010, Severity 13 to IEC 68-2-87
控制单元 Control electronics		
额定控制电源电压 Rated control supply voltage 额定控制电源电流 Rated control supply current	V mA mA mA	380-415, 200-240, 100-120 (+10%/-15%) 40, 380~415V 75, 200-240V 100, 100-120V
额定频率 Rated frequency	Hz	50/60，工作范围 45-66　50/60, working range 45-66
短路保护(控制电路) Short-circuit protection, control circuit		嵌入式熔断器，250mA 慢吹，6.3mm × 32mm built-in fuse, 250mA slow-blow, 6.3mm × 32mm
控制时间 Control times　通电延时 on delay	ms	≤ 50 分别控制模式，控制电源电压施加后 ≤ 50 controlled separately when the control supply voltage is applied and the voltage is present in the control circuit
通电延时 on delay	s	≤ 1 接触器式运行模式，通过开关控制电压进行 ON/OFF 控制 ≤ 1 contactor operation. ON/OFF by switching the control supply voltage
通电延时 on delay	s	≤ 1.1 自动运行模式，通过开关控制电压进行 ON/OFF 控制 ≤ 1.1 automatic mode. ON/OFF by switching the control supply voltage
恢复时间 recovery time	ms	≤ 440 直流制动后 ≤ 440 after DC braking
主电源故障桥接时间 Mains failure bridging time　控制电源电压 control supply voltage	ms	≥ 80
主电源故障反应时间 Mains failure reaction time　负载电流回路 load current circuit	ms	≥ 100
运行显示(常亮) operating indications (continuous light)　LED1		准备就绪 Ready
LED2		起动或减速 starting or slowing down
LED3		起动结束 starting ended
LED4		节能运行 energy save mode active
LED5		制动 braking
故障显示(闪烁) Fault indications (flashing light)　LED1		主电源故障(断相，失压 / 失控电源电压太低) Mains fault (phase failure, missing voltage/load, control supply voltage too low)
LED2		可控硅故障(一个或几个可控硅损坏) Thyristor defective (one or several thyristorís) alloyed)
LED3		温度过高或过载 Excess temperature or overload deactivation
LED4		装置故障 Unit malfunction
LED5		装置过热；禁止再起动；但装置可继续工作 Unit gets too hot: new starting is inhibited: however, unit continues to operate

控制输入 对于带串行接口的规格，输入的分配取决于 COM-SIKOSTART PC 通讯程序设定的参数组的数量 (最多可以选择 3 组参数) Control inputs on versions with serial interface, the input assignments are dependent on the number of parameter sets selected via the COM SIKOSTART PC communication program (up to 3 parameter sets can be selected)		单台电机的标准应用 Standard application with one motor	多台电机或可逆电机的顺序起动 Serial starting of several motors or of reversible pole motors	
	输入 1 Input 1	运行 ON	运行 / 停止 ON/OFF 参数组 1　Parameter set 1	运行 / 停止 ON/OFF 参数组 1　Parameter set 1
	输入 2 Input 2	停止 OFF	运行 / 停止 ON/OFF 参数组 2　Parameter set 2	运行 / 停止 OOFF 参数组 2　Parameter set 2
	输入 3 Input 3	复位 Reset	复位 Reset	运行 / 停止 ON/OFF 参数组 3　Parameter set 3
额定工作电流 Rated operational current	mA	接近 10mA(按 DIN 19240 标准) approx. 10 to DIN 19240		
额定电压 Rated voltage	V	直流 24V，由内部电源通过直流 +24V 端子引出) 24V form built-in power supply unit via DC +24V teminal		

继电器输出　Relay outputs　输入 1　Output 1		综合故障信号(转换触头) Group fault signal (changeover contact)
输入 2　Output 2		起动结束：电机接至全电压(常开触头) Start ended: motor connected to full mains voltage (normally open contact)
输入 3　Output 3		直流制动：控制制动接触器(常开触头) DC brakes active: for control of the mains voltage (normally open contact)
额定工作电流 Rated operational current	A A A	3　AC-15/AC-14 at 240V 0.1　DC-13 at 240V 0.5　DC-13 at 24V
短路保护 Short-circuit protection		4A 使用类别 gL/gG, 6A 速动(熔断器不包括在供货范围内) 4A utilization category gL/gG, 6A quick-acting (fuse is not included in scope of delivery)
最大导线截面　Max. conductor cross-sections		
单芯线 single-wire	mm^2	0.5-2.5
带套管的细绞线　fine-wire with wire end ferrule	mm^2	0.5-1.5
紧固力矩 tightening torque	Nm	0.8-1.4

6

技术数据 Technical data

功率单元 Power electronics			
持续运行(I_e的百分数)Continuous operation (% of I_e)			115%
起动电流(I_e的百分数)Stating current (% of I_e)			600% 450% 300% 250% 200%
最大起动时间 Max. starting time			
冷态(40ºC 或 50ºC) cold (40ºC or 50ºC)		s	2 10 60 120 200
热态 warm		s	1 5 30 60 100
允许环境温度 Permissible ambient temperature	运行 in operation	ºC	0~40 或 55(可选) 0~40 or 55 (switchable)
	储存 in storage	ºC	-40~+80
运行范围 Operating range	额定电压 Rated voltage	V	200 (-15%)~500(+10%) 3RW22..-....5
		V	200 (-15%)~415(+10%) 3RW22..-0DB14
		V	690 (on request)
	频率 Frequency	Hz	45~66
防护等级(按 IEC 947-1 和 DIN 40050 标准) Degree of protection			IP20 for 3RW22 21-3RW22-31 IP00 for 3RW22 34-3RW22 50
过载保护 Overload protection			散热片上有热传感器 Thermal sensor on the heatsink 带热记忆的固态保护(3RW22..-..B..型起动器) Solid-state protection with thermal image (unit type 3RW22..-..B..)
允许安装高度 Permissible installation altitude			海拔 3000 米以下。海拔 1000 米以上，I_e 呈线性减小,如海拔 2000 米为 0.87I_e，3000 米为 0.77I_e up to 3000m above sea level; over 1000m above sea level linear reduction of I_e, thus at 2000m above sea level 0.87 × I_e at 3000m above sea level 0.77 × I_e
风扇 Fan	额定控制电压 Rated control voltage	V	230 ± 10%
	频率 Frequency	Hz	45~66

型号 Type			3RW22 21	3RW22 23	3RW22 25	3RW22 26	3RW22 27	3RW22 28	3RW22 30	3RW22 31
负载额定值 Load ratings										
额定工作电流 I_e Rated operational current I_e	at 40ºC, AC-3	A	7	10.5	22	28	35	45	50	70
电动机功率(400V) Motor output (400V)	at 40ºC, AC-3	kW	3	4	11	15	18.5	22	25	37
额定工作电流 I_e Rated operational current I_e	at 55ºC, AC-3	A	5.5	9	16	22	32	37	45	63
电动机功率(400V) Motor output (400V)	at 55ºC, AC-3	kW	2.2	4	7.5	11	15	18.5	22	30
每小时允许起动次数 运行 S4, T_{amb}=40ºC 周期持续系数 =30% Permissible starts per hour during intermittent operation S4.	350% × I_e for 5 s	1/h	80	90	30	20	50	30	20	40
T_{amb}=40ºC	300% × I_e for 10 s	1/h	50	60	20	10	30	20	20	30
cyclic duration factor=30%	250% × I_e for 15 s	1/h	50	50	20	10	30	20	20	30
额定工作电流(40ºC)下的功率损耗 Power loss at rated operating current (40ºC) approx		W	30	40	70	80	105	130	140	220
最大导线截面积 Max. conductor cross-sections										
单芯线 Single-wire		mm^2	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16
不带套管的细绞线 fine-wire without wire end sleeves		mm^2	2.5-16	2.5-16	2.5-16	2.5-16	2.5-16	2.5-16	2.5-16	2.5-16
带套管的细绞线 fine-wire with wire end sleeves		mm^2	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16
绞合线 Stranded		mm^2	2.5-16	2.5-16	2.5-16	2.5-16	2.5-16	2.5-16	2.5-16	2.5-16
旁路接触器 Bridging contactor	to AC-1		3TF20	3TF20	3TF42	3TF42	3TF44	3TF44	3TF44	3TF46
如果需要，可与 AC-3 主接触器一样 if required, same as mains contactor	to AC-3		3TF40	3TF41	3TF44	3TF44	3TF45	3TF46	3TF47	3TF48
推荐的制动接触器 Recommended braking contactor			3TF20 82	3TF20 82	3TF31 20	3TF32 20	3TF32 20	3TF34 20	3TF35 20	3TF35 20

技术数据 Technical data

型号 Type			3RW22 34	3RW22 35	3RW22 36	3RW22 38	3RW22 40	3RW22 41
负载额定值 Load ratings 额定工作电流 I_e Rated operational current I_e	at 40ºC,AC-3	A	100	135	160	235	300	355
电动机功率(400V) Motor output (400V)	at 40ºC, AC-3	kW	55	75	90	132	160	200
额定工作电流 I_e Rated operational current I_e	at 55ºC, AC-3	A	85	110	140	205	250	300
电动机功率(400V) Motor output (400V)	at 55ºC, AC-3	kW	45	55	75	110	132	160
每小时允许起动次数 断续运行 S4, T_{amp}=40ºC 周期持续系数 =30% Permissible starts per hour	350% × I_e for 5 s	1/h	120	100	90	90	20	40
during intermittent operation S4. T_{amp}=40ºC	300% × I_e for 10 s	1/h	80	60	60	60	10	20
cyclic duration factor=30%	250% × I_e for 15 s	1/h	70	50	50	50	10	20
额定工作电流(40ºC)下的功率损耗 Power loss at rated operational current (40ºC) approx.		W	260	370	435	640	810	970
风扇 Fans	数量 Quantity		1	1	1	1	2	2
	输出功率 Output	W	18	18	18	18	36	36
最大导线截面[1]) Max conductor cross-sections	绞合线 stranded	mm²	95	120	150	240	240	240
旁路接触器 Bridging contactor	to AC-1		3TF48	3TK48	3TK50	3TK52	3TK52	3TK54
如果需要,可与 AC-3 主接触器一样 (if required, the same as mains contactor to AC-3)	to AC-3		3TF50	3TF51	3TF52	3TF54	3TF55	3TF56
推荐制动接触器 Recommended braking contactor			3TK37 20	-	-	-	-	-
推荐制动接触器组合(分断+闭合接触器) Recommended braking contactor combination (opening+closing contactor)			- -	3TF44+ 3TF48	3TF46+ 3TF49	3TF48+ 3TF51	3TF50+ 3TF51	3TF52+ 3TF54

型号 Type			3RW22 42	3RW22 43	3RW22 45	3RW22 47	3RW22 50
负载额定值 Load ratings 额定工作电流 I_e Rated operational current I_e	at 40ºC,AC-3	A	450	560	700	865	1200
电动机功率(400V) Motor output (400V)	at 40ºC, AC-3	kW	250	315	400	500	710
额定工作电流 I_e Rated operational current I_e	at 55ºC, AC-3	A	355	450	560	700	1000
电动机功率(400V) Motor output (400V)	at 55ºC, AC-3	kW	200	250	315	400	560
每小时允许起动次数 断续运行 S4,T_{amp} = 40ºC 周期持续次数＝30% Permissible starts per hour	350% × I_e for 5 s	1/h	180	90	100	120	60
during intermittent operation S4,	300% × I_e for 10 s	1/h	100	60	60	80	40
cyclic duration factor = 30%	250% × I_e for 15 s	1/h	70	50	60	70	40
额定工作电流(40ºC)下的功率损耗 Power loss at rated operational current (40ºC) approx.		W	1560	1950	2060	2440	3550
风扇 Fans	数量 Quantity		3	3	3	3	3
	输出功率 Output	W	54	135	135	78	78
最大导线截面[1]) Max conductor cross-sections	连接排 connection bar	mm²	40 × 10	40 × 10	40 × 10	50 × 20	60 × 20
旁路接触器 Bridging contactor	to AC-1		3TK56	3TF57	3TF68	3TF69	2 × 3TF68
如果需要,可与 AC-3 主接触器一样 if required, also suitable for occasional direct start at $I_A \leq 6 \times I_e$ as a main contactor to AC-3)	to AC-3		3TF57	3TF68	3TF68	3TF69	2 × 3TF68
推荐制动接触器组合(分断＋闭合接触器) Recommended braking contactor combination (opening + closing contactor)			3TF52+3TF54	3TF54+3TF55	3TF54+3TF56	3TF56+3TF57	3TF57+3TF58

[1])鉴于连接排的热膨胀，必须使用柔性连接排。

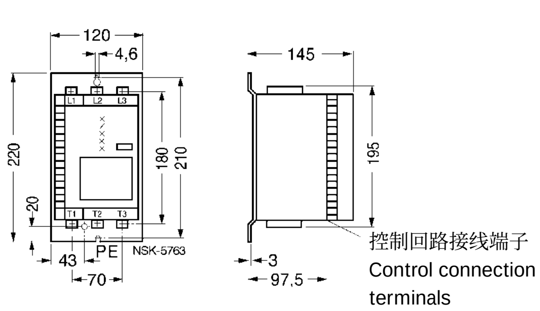
[1]) Owing to thermal expansion of the connection bars, the busbars must be connected by way of flexible connectors.

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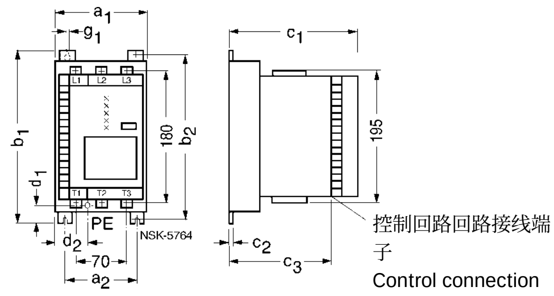
技术数据 Technical data

规格 Version			标准型 Standard version	带电子保护型 With soild-state unit potentiometers	带电子保护和 RS 232 串行 PC 接口型 With soild-state unit protection and RS 232 serial PC interface	
型号 Type			3RW22..-1AA05	3RW22..-1AB05	3RW22..-..B1	
各种规格中的功能调节方式 Adjustability of functions in the various unit versions			软起动器上带电位计 on the unit, with potentionmeters		软起动器上带电位计 on the unit, with potentionmeters	通过 PC, 带 COM SIKOSTART 程序 Via a PC, with COM SIKOSTART
起动 Start	突跳脉冲 Breakaway pulse	振幅 Amplitude	20~100% × U_n (U_n:主回路电压)			21~100% × U_n
		持续时间 Duration	50~1000 ms		50~1000 ms	100~1000 ms
	电压斜坡 Start ramp	起动电压 Start voltage	20~100% × U_n			
		持续时间 Duration	0.3-180 s		0.3-180 s	0-1000 s
	电压限制 Voltage limiting	幅度 Amplitude	20~100% × I_a (I_a:100% U_n 时，电机起动电流) 20~100% × I_a (I_a: motor starting current at 100% U_n)	50-600% × I_e (I_e: 软起动器额定电流) 50-600% × I_e (I_e: Rated apparatus current)	50-600% × I_e (I_e: 软起动器额定电流) 50-600% × I_e (I_e: Rated apparatus current)	安培数,最大到 6 × I_e Numeric value in Amps, up to max. 6 × I_e
		持续时间 Duration	直至起动被检测到 until start-up is detected			
	电流限制 Current limiting	振幅 Amplitude	-		-	20-100% × U_n
		持续时间 Duration	-		-	0-1000 s
	起动检测 Start-up detection	功能 Function	当达到额定转速时，电机端电压自动增至 100% U_n Automatic increasing of the motor's terminal voltage to 100% × U_n when the rated speed is reached			
			功率因数检测 by p.f. detection	功率因数和电流检测 by p.f. detection and current detection		
		功率因数和电流可撤消 p.f. and current detection can be deactivated	×			
	紧急起动(仅电压斜坡有效) Emergency start (only start ramp active)		×			
运行 Operation	节能模式 Energy saving mode		×			
	旁路接触器运行 Bridging contactor operation		×			
	持续运行，最大 115% I_e (可控硅全通) Continuous operation at max. 115% I_e (full control the thyristors)		×			
停止 Running down	自由停止 Free running down		×			
	平滑停止 Smooth running down	停止斜坡的起始电压 intial voltage of the stop ramp	固定为 90% × U_n fixed 90% × U_n		固定为 90% × U_n fixed 90% × U_n	20-100% × U_n
		停止斜坡的关断电压 Off voltage of the stop ramp	起动斜坡起始电压的 85% 85% of the start ramp's initial voltage		起动斜坡起始电压的 85% 85% of the start ramp's initial voltage	20-100% × U_n
		停止时间 Run-down time	1-20 s		1-20 s	0-1000 s
	泵停止 Pump running down	泵停止关断电压 Off voltage of pump running down	-			20-90% × U_n
		停止时间 Run-down time	-	5-90 s	5-90 s	5-200 s
	直流制动 DC braking	制动力矩 Braking torque	与制动时间成反比 20%~85% 最大可能制动力矩 Inversely proprtional to the braking time, form 20% to 85% of the max. possible braking torque		与制动时间成反比 20%~85% 最大可能制动力矩 Inversely proprtional to the braking time, form 20% to 85% of the max. possible braking torque	20~100% 最大可能制动力矩，与制动时间无关 20% to 100% of the max. possible braking torque regardless of breaking time
		停止时间 Run-down time	3-18 s		3-18 s	1-18 s

外型及安装尺寸 Dimension drawings

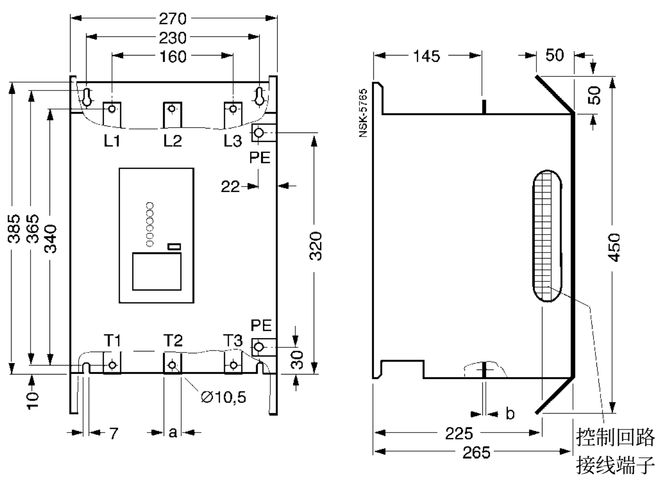


3RW22 21

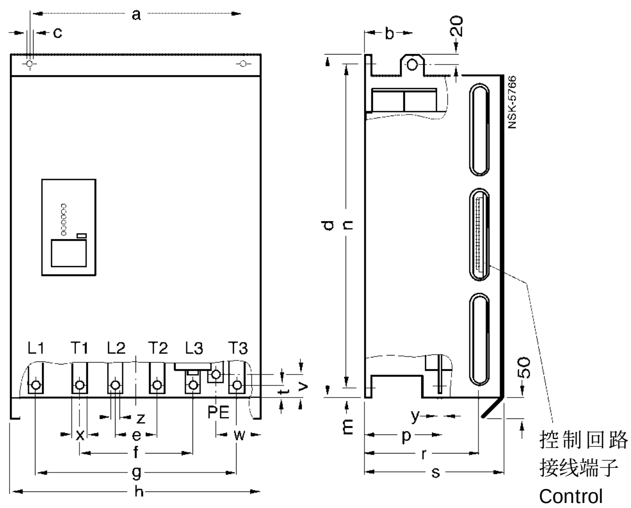


3RW22 23 to 3RW22 31

类型 Type	a_1	a_2	b_1	b_2	c_1	c_2	c_3	d_1	d_2	g_1
3RW22 23	125	95	240	230	177.5	2	130	30	45	4.6
3RW22 25	125	95	240	230	177.5	2	130	30	45	4.6
3RW22 26	165	135	240	230	180	2	132.5	50	65	4.6
3RW22 27	205	175	280	270	180	2	132.5	50	85	4.6
3RW22 28	205	175	280	270	180	2	132.5	50	85	4.6
3RW22 30	222.5	185	290	275	225	2.5	175	55	94	6.6
3RW22 31	222.5	185	290	275	225	2.5	175	55	94	6.6



3RW22 34 to 3RW22 41



3RW22 42 to 3RW22 50

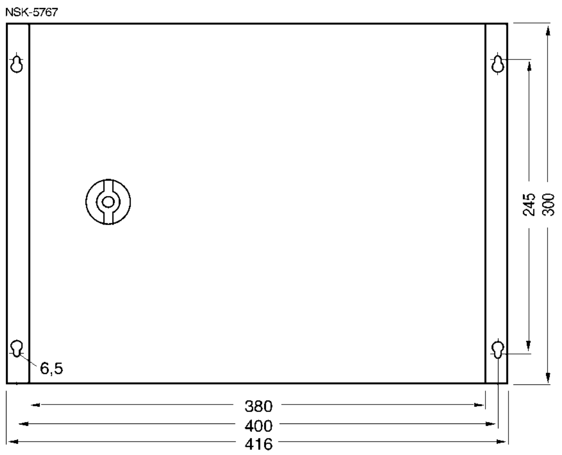
类型 Type	a	b
3RW22 34 to 3RW22 36	20	3
3RW22 38 to 3RW22 41	25	5

软起动器与其它装置的距离：
为了使空气自由对流以便冷却，软起动器与其它装置的垂直距离必须不小于以下值：
3RW22 21 to 3RW22 45: 200mm
3RW22 47 to 3RW22 50: 400mm
Distance form other devices:
For unobstructed supply and extraction of cooling air, the vertical distance form other devices must not be less than the following values:

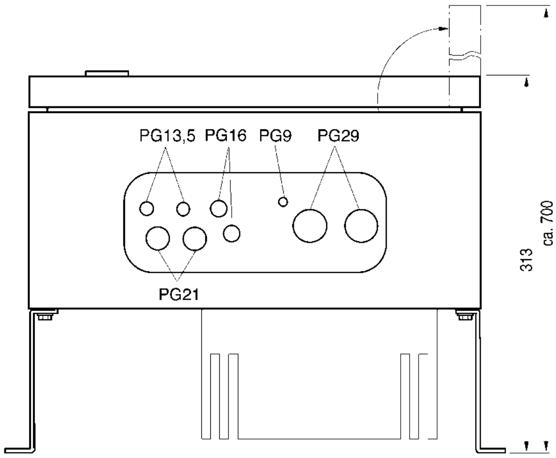
类型 Type	a	b	c	d	e	f	g	h	m	n
3RW22 42 3RW22 43 3RW22 45	400	90	11	605	80	210	370	465	15	570
3RW22 47	480	115	11	680	100	260	460	560	20	645
3RW22 50	520	115	13	825	105	275	485	600	20	790

类型 Type	p	r	s	t	v	w	x	y	z
3RW22 42 3RW22 43 3RW22 45	145	215	255	20	25	87.5	30	5	11
3RW22 47	230	295	340	25	27	100	40	8	13
3RW22 50	220	285	330	25	29	110	50	10	13

3RW22 23~3RW22 31 防护罩， IP 54 Enclosures to degree of protection IP 54 for 3RW22 23 to 3RW22 31



顶部视图
Top view



底部视图
View from below

软起动器散热片
Heatsink of a built-in unit

3RW29 20 - 0AB00

电路形式

SIKOSTART 3RW34 可应用于两种类型电路。

标准电路

电动机开关和保护装置跟软起动器简单串联，电动机通过三根导体跟软起动器相连接。

内三角电路

此种电路的接线跟星三角起动器很类似，软起动器的相线跟电动机分离绕组串联。这样，软起动器只需承载相电流，约是电动机电流 I_n (线电流)的 57%。线电流是相电流的 1.73 倍。

何种场合用何种电路？

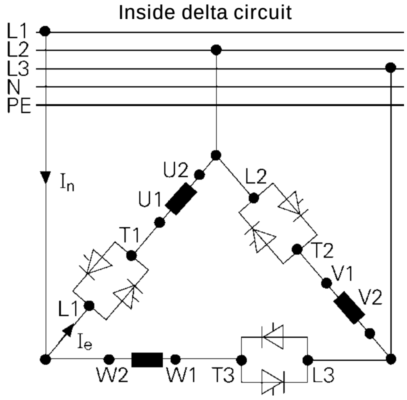
标准电路的接线费用是最低的，内三角电路的接线工作至少加倍。这抵消了内三角电路的一部分价格优势，但无论如何这种电路总是最省钱的。无论采用哪种电路，标准电路与内三角电路之间的互换性使得此装置总是能为通用的机械与机电起动器提供真正的可选择性。

Circuit design

The SIKOSTART 3RW34 can be operated in two types of circuits.

内三角电路

Inside delta circuit



软起动器额定电流 I_e 是电动机电流 I_n 的 57%

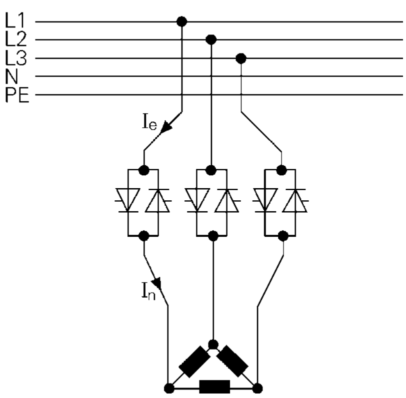
6 根导体至电动机

Rated current I_e of starter corresponds to 57% of nominal motor current I_n

6 conductors to the motor

标准电路

Standard circuit



软起动器额定电流 I_e 与电动机电流 I_n 相等

3 根导体至电动机

Rated current I_e of starter corresponds to nominal motor current I_n

3 conductors to the motor

Standard circuit

With this technique, the switching devices for dis-connecting and protecting the motor are simply installed in series with the soft starter, the motor is connected to the soft starter with 3 conductors.

Inside delta circuit

In this case, the wiring is similar to star/delta starters. The phases of the soft starter are connected in series with the separate motor windings. The advantage with this technique is that the soft starter only has to carry the phase current, approximately 57% of the motor current I_n (conductor current).The conductor current and the phase current are related by the factor 1.73.

Which circuit for which applications?

The standard circuit requires the least wiring outlay. The wiring effort for the Inside delta circuit is at least doubled. This partly balances out the price advantage for this circuit type. In the case of short connections between starter and motor however, this circuit will always be the cheapest. Whatever circuit is chosen, the ability to change modes between the standard circuit and Inside delta circuit, will always provide a real alternative to the conventional mechanical and electromechanical starters.

软起动

SIKOSTART 3RW34在电机起动时采用标准电压斜坡(图 1)。

通过设定起动电压与斜坡时间使起动电流和起动力矩尽可能降到最低。最佳设定是电动机通电后立即开始平缓起动。起动电压 U_s 从 30%~80% 可调，斜坡时间 t_R 从 0.5s~60s 可调。

软停止

当传动装置断电时，在反力矩作用下电动机可能会突然停止。例如，为了避免传送带上的物体坠落，就需要软停止。SIKOSTART 3RW34 具备软停止功能。停止斜坡时间 t_{OFF} 从 0.5s~60s 可调，关断电压 U_{OFF} 与所设定起动电压 U_s 有关(图 2)。

输入，输出，LED 显示

起动命令可通过控制端输入。如果起动后此输入端断电，SIKOSTART就会实行软停止。为了确保系统可靠运行，3RW34 备有输出触头以便自锁。此外，还有 2 个输出可发送起动结束或故障信号，也可通过LED指示各种运行状态(准备就绪，起动，起动结束，可控硅故障)。

可选的 AS-i 总线系统

全系列软起动器都可加装 AS-i 触发模块。

如果在控制单元侧面加装此模块，软起动器就完全可以通过总线系统控制(起动与停止)。此软起动器还可通过总线系统发送它的3组辅助触头的状态。

Soft starting

The SIKOSTART 3RW34 uses the standard voltage ramp function (Figure 1) when the motor starts. The starting voltage and ramping time are set such that the starting current and starting torque are reduced as far as possible. The best setting is reached when the motor starts up slowly but immediately after switch-on .The starting voltage U_e can be adjusted from 30% to 80% and the ramping time t_R can be adjusted between 0.5s and 60s.

Soft stopping

When the drive is switched off, the motor comes to an abrupt halt with an appropriate opposing torque. To prevent objects on a conveyor belt from falling over, for example, a soft stopping is possible. For this purpose, the SIKOSTART 3RW34 features a soft stop function. The stop ramping time t_{OFF} can be adjusted between 0.5 s and 60 s. The switch-off voltage U_{OFF} is dependent on the selected start voltage U_s (Figure 2).

Inputs, outputs, LEDs

The start command can be supplied via a control input. If the control voltage is disconnected from this input later, the SIKOSTART shuts down with a soft stop.
To support this mode by means of keys, the 3RW34 provides an output contact for self-latching.
A further 2 outputs signal the end of the start or a fault state.
Different operating states are also signaled via LEDs (ready, starting, end of start, thrystor fault)

Opional activation via AS-i bus

The range of starters is rounded off with an optional module for AS-i activation. If an additional-flat module is screwed onto the side of the control module, the soft starter can be completely controlled (Start and Stop) via the bus.
The soft starter can also send checkback signals regarding the status of its 3 auxiliary contacts via the bus.

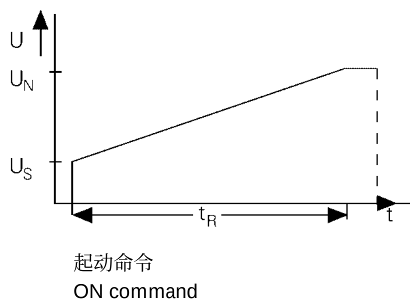


图 1 软起动电压斜坡

Fig. 1 "Soft starting" with voltage ramp

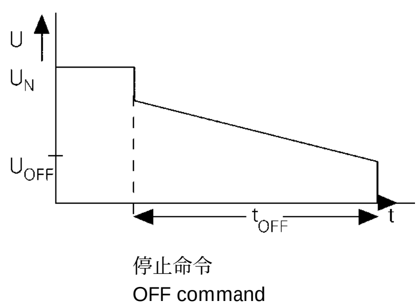
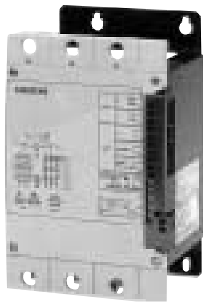


图 2 软停止电压斜坡

Fig. 2 Voltage progression on switch-off with the "Soft stopping" function

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选型及订货数据 Selection and ordering data



环境温度 40ºC
At ambient temperature 40ºC

	额定工作电压 Rated operational voltage U_e V	额定工作电流 Rated operational current of the Motor I_e A	电动机额定功率 P_e Rated output of motors P_e 230 V kW	400 V kW	500 V kW	订货号 Order No.	大约重量 Weight approx kg
标准电路 Standard circuit	200~400	57	15	22	-	3RW34 54-0DC□4	7.8
		70	18.5	37	-	3RW34 55-0DC□4	
		110	22	45	-	3RW34 57-0DC□4	8.1
		110	30	55	-	3RW34 57-0DC□4	
		135	37	75	-	3RW34 58-0DC□4	
		162	45	90	-	3RW34 65-0DC□4	15.9
		195	55	110	-	3RW34 66-0DC□4	
		235	75	132	-	3RW34 67-0DC□4	
		352	90	160	-	3RW34 72-0DC□4	32.2
		352	110	200	-	3RW34 72-0DC□4	
		500	160	250	-	3RW34 83-0DC□4	59.9
		700	-	315	-	3RW34 84-0DC□4	
		700	-	355	-	3RW34 84-0DC□4	
		700	-	400	-	3RW34 84-0DC□4	
		1050	315	560	-	3RW34 86-0DC□4	83.0
		1050	355	630	-	3RW34 86-0DC□4	
	230~575	70	-	-	37	3RW34 54-0DC□5	7.8
		110	-	-	45	3RW34 55-0DC□5	
		135	-	-	55	3RW34 57-0DC□5	8.1
		135	-	-	75	3RW34 57-0DC□5	
		162	-	-	90	3RW34 58-0DC□5	
		162	-	-	110	3RW34 65-0DC□5	15.9
		195	-	-	132	3RW34 66-0DC□5	
		235	-	-	160	3RW34 67-0DC□5	
		352	-	-	220	3RW34 72-0DC□5	32.2
		500	-	-	250	3RW34 83-0DC□5	59.5
		500	-	-	355	3RW34 83-0DC□5	
		700	-	-	400	3RW34 84-0DC□5	
		700	-	-	450	3RW34 84-0DC□5	
		700	-	-	500	3RW34 84-0DC□5	
		1050	-	-	670	3RW34 86-0DC□5	83.0
		1050	-	-	750	3RW34 86-0DC□5	
内三角电路 Inside delta circuit	200~400	110	22	45	-	3RW34 54-0DC□4	7.8
		110	30	55	-	3RW34 54-0DC□4	
		135	37	75	-	3RW34 55-0DC□4	
		205	55	110	-	3RW34 57-0DC□4	8.1
		235	75	132	-	3RW34 58-0DC□4	
		285	90	160	-	3RW34 65-0DC□4	15.9
		352	110	200	-	3RW34 66-0DC□4	
		450	132	250	-	3RW34 67-0DC□4	
		608	160	335	-	3RW34 72-0DC□4	32.2
		865	-	400	-	3RW34 83-0DC□4	59.9
		865	250	500	-	3RW34 83-0DC□4	
		1216	315	560	-	3RW34 84-0DC□4	
		1216	375	630	-	3RW34 84-0DC□4	
		1216	400	710	-	3RW34 84-0DC□4	
		1720	450	850	-	3RW34 86-0DC□4	83.0
		1720	530	1000	-	3RW34 86-0DC□4	
	230~575	110	-	-	55	3RW34 54-0DC□5	7.8
		110	-	-	75	3RW34 54-0DC□5	
		135	-	-	90	3RW34 55-0DC□5	
		205	-	-	132	3RW34 57-0DC□5	8.1
		235	-	-	160	3RW34 58-0DC□5	
		285	-	-	200	3RW34 65-0DC□5	15.9
		450	-	-	250	3RW34 67-0DC□5	
		450	-	-	355	3RW34 67-0DC□5	
		608	-	-	400	3RW34 72-0DC□5	32.2
		865	-	-	500	3RW34 83-0DC□5	59.9
		865	-	-	630	3RW34 83-0DC□5	
		1216	-	-	670	3RW34 84-0DC□5	
		1216	-	-	750	3RW34 84-0DC□5	
		1216	-	-	850	3RW34 84-0DC□5	
		1720	-	-	1000	3RW34 86-0DC□5	83.3
		1720	-	-	1200	3RW34 86-0DC□5	

订货号后缀 / Order No. suffix

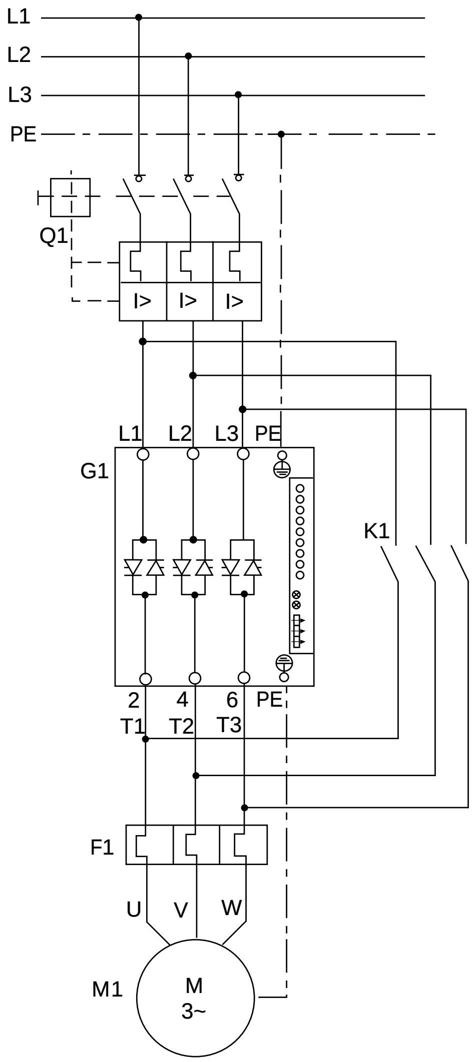
控制电压 / Control voltage
DC 24 V 2
AC 230 V 4

技术数据				Technical data
控制单元	Control electronics			
额定控制电源电压	Rated control supply voltage		V	24VDC, 230VAC (+10%/-15%)
额定频率	Rated frequency		Hz	45-66
功率单元	Power electronics			
额定工作电流 I_e		at 40ºC	A	50-1050
Rated operational current I_e		at 50ºC	A	57-960
功率损耗	Power loss at rated current(40ºC)		W	120-2550
起动电流 / 最大起动时间	Starting current/max. starting time		% I_e /s	300% I_e/10s
允许环境温度	Permissible ambient temperature		ºC	-25-+60
工作电压范围	Voltage operating range		V	200 (-15%) ~575 (+10%)
额定频率	Rated frequency		Hz	45-66
功能	Function			
参数设置数量	Number of parameter sets			1 组
起始电压	Initial voltage			30-80%
起动时间	Starting time			0.5-60s
限流	Current limiting			_
限压	Voltage Limiting			_
软停止	Soft stop			×
泵停止	Pump stop			_
节能运行	Energy saving mode			_
直流制动	DC braking			_
突跳脉冲起动	Starting pulse			_
通讯	Communication			AS-i 可选模块 Optional AS-i
过载能力	Overload profile			3 × I_e/10s
UL-CSA	UL-CSA			×
CE 标志	CE Mark			×

注：－表示无此功能 Not available
×表示有此功能 Available

6

典型接线图 Typical circuit diagram



1MTR 的开关位置设定 / Switch Settings for 1MTR

故障时闭合 (SW1-4) / Close On Fault (SW1-4) →

"Y" 型电机 (SW1-3) / Wye Motor (SW1-3) ←

起动无延时 (SW1-2) / No Start Delay (SW1-2) →

起动带延时 (SW1-1) / With Start Delay (SW1-1) ←

开关功能 / Switch Functions

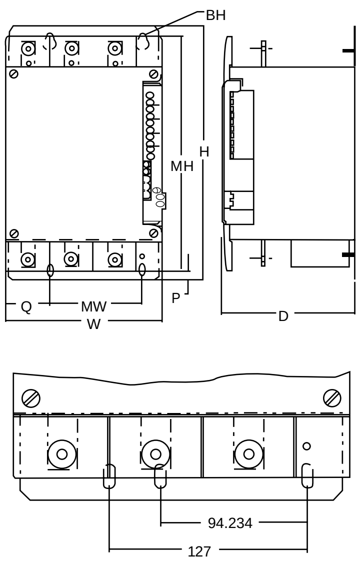
SIKOSTART 的接线端子外观
View of Terminal Block Edge of SIKOSTART

图 14 / Figure 14
单速不可逆电动机的主回路中，起动器与旁路接触器并联
Power wiring for a single speed, non-reversing motor, wired "In Line" with bypass contactor

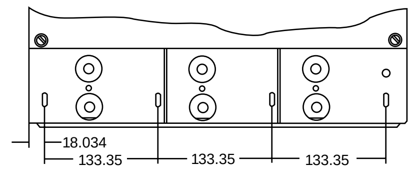
3RW34 尺寸图 3RW Dimensions diagram

尺寸 Dimensions (mm)

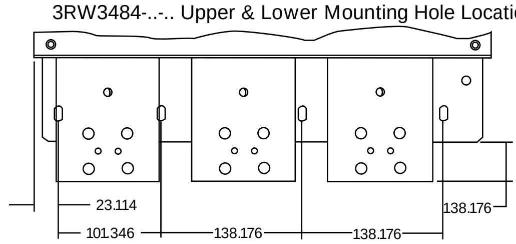
订货号 Catalog Number	星型 Ie Ie, Wye (Amps)	宽 Width (W)	高 High (H)	深 Depth (D)	安装宽度 Mount Width (MW)	偏移宽度 Width Offset (Q)	安装高度 Mount Height (MH)	偏移高度 Height Offset (P)	安装孔 Mount Hole (BH)
3RW345*...	35-105	215.9	355.6	186.944	127/ 94.234	61.468	327.152	15.748	6.35
3RW346*...	131-248	291.846	381	189.484	247.65	22.098	331.978	27.432	6.35
3RW3472...	361	344.424	416.56	224.282	285.75	29.464	335.534	44.958	6.35
3RW3484...	480, 720	442.468	516.89	231.14	132.842	18.034	449.834	31.496	6.35
3RW3486...	960	447.548	719.328	220.472	101.346/ 138.176 138.176	23.114	653.034	28.702	6.35



3RW345*



3RW3484-..-.. 上下安装孔的位置
3RW3484-..-.. Upper & Lower Mounting Hole Locations



3RW3486-.. 上下安装孔的位置
3RW3486-.. Upper & Lower Mounting Hole Locations

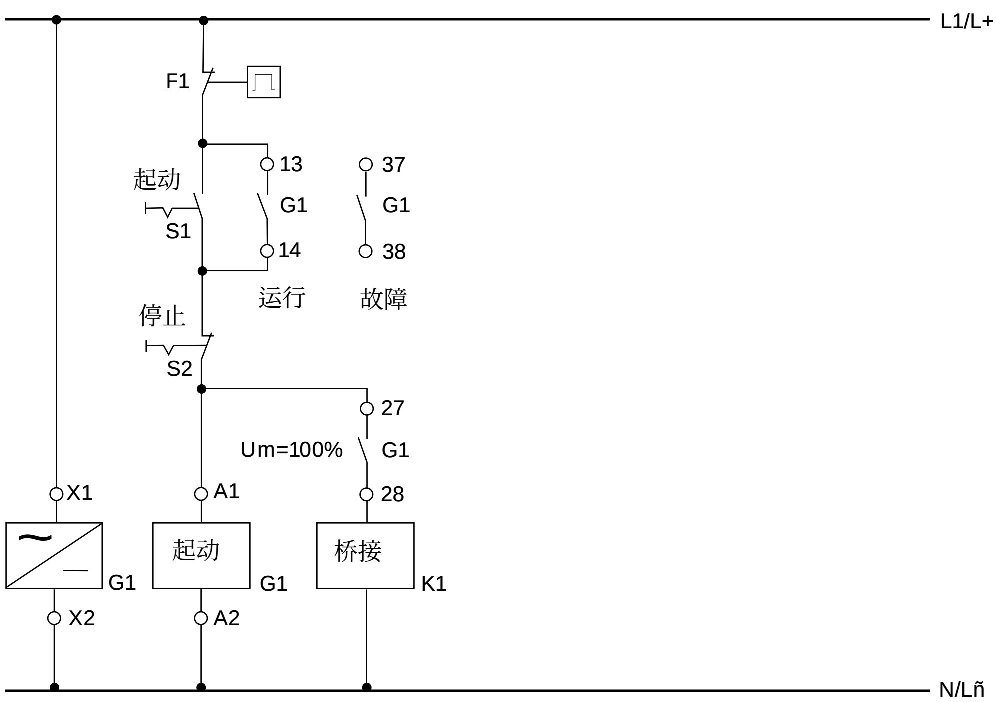


图 15 / Figure 15
单速不可逆电动机的主回路中，起动器与旁路接触器并联
Control wiring for a single speed, non-reversing motor, wired "In Line" with bypass contactor

6

装置结构

SIRIUS 3R S0 至 S3 级软起动器内部集成的“自持”和“起动结束”辅助触头提供了额外的控制用途。当软起动器由简单的“ON”与“OFF”按钮控制时,“自持”信号可用于电气联锁。而“起动结束”信号的作用，举例来说可用于操作所控制的泵的阀门，使液体可以流通。

两种规格，应用广泛

SIRIUS 3R 电子式软起动器有两种规格。标准型(S00至S3级）具有软起动和软停止功能以及三个可调参数（起动时间$t_{R\ on}$，起始电压U_s和停止时间$t_{R\ off}$)。特殊型具有两个斜坡，也就是说有两个软起动功能，可用于起动双速电动机。通过不同的输入可选择两者之一。不同的起动时间t_{R1}和t_{R2}可由电位计设定，起动电压U_s对这两种功能都有效。

最优化的调节方式

电子式软起动器与现存起动器之间的区别在于这种能用于所有负载的最优化的调节方式。通过三个电位计就可以改变起动时间，起始电压和停止时间。斜坡时间是通过特殊软件实现渐进调节的，因此在通常设置范围之内，时间可进行高精度设定。

平滑起动与减速

由于软起动器内部集成的软减速功能，不仅可以实现减力距起动（就象星三角起动)，而且当电动机关断时可防止传动装置突然停止。

安全、功能化

两相控制使得电动机电流在整个起动过程中保持在最低值。星三角起动方式在星形向三角形切换时会产生不可避免的冲击电流，电子式软起动器用连续电压控制，因而不会产生这种现象。除此之外，功率半导体具有的特殊控制功能可自动防止在每次起动过程中产生瞬时电流峰值(涌入电流)。

附件

通过在软起动器壳体上卡装一个风扇，软起动器可安装在任何位置。此外，通断频率即使已经很高，有了风扇后还可进一步提高。对于S2和S3级软起动器，接线端子上还可加装端子护罩，以实现手指触摸防护。当连接电缆接线片或母排时，S3 级软起动器可加装接线护罩。

Equipment details

The integrated ”Self-hold” and “End-of-Startup” auxiliary contacts integrated with Sizes S0 to S3 provide additional control advantages. The self-hold signal is used for interlock when controlling by means of simple “ON” and “OFF” pushbuttons. The end-of-startup signal can be used, for example, to operate the valves (in the case of a pump control), in order to enable delivery.

Two versions for a wide range of application

The electronic soft starters are available in two different versions. The standard version (Size S00 to S3) incorporates the soft starting and soft deceleration function with the three adjustable parameters (start-up time $t_{R\ on}$, starting voltage U_s and stop time $t_{R\ off}$). A special version dual ramp for starting two speed motors, on the other hand, has two soft-starting functions. Here, it is possible via separate inputs to select one of the two. Different start-up times t_{R1} and t_{R2} can be set by means of the potentiometers; the starting voltage U_s is valid for both functions.

Optimum adjustment facilities

The difference between the electronic solution and the existing starters lies in the optimum adjustment facilities for all drive options. Using three potentiometers, it is possible to alter the run-up time, the starting voltage and the coasting time. The ramp time is adjustable progres-sively by means of special software, that is to say the times within the normal setting range can be adjusted with particular accuracy.

Smooth starting and deceleration

Not only the torque-reduced starting (as with star-delta), is possible but also the abrupt stalling of the drive when the motor is switched off, is prevented by the integrated soft deceleration function.

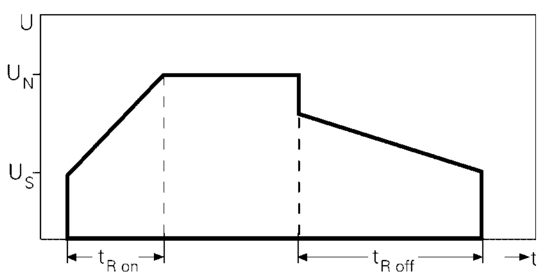
Safe and functional

The two-phase control ensures that the current is maintained at the lowest possible values during the entire run-up time. The current peak, unavoidable with star-delta starting during changeover from star to delta connection, does not occur by virtue of the continuous voltage control of the electronic soft starter. In addition, a special control function of the power semiconductors automatically prevents the transient current peaks (inrush currents) from occuring during each starting operation.

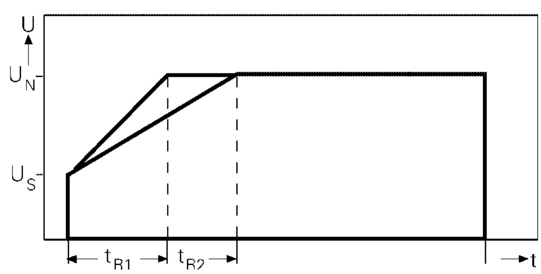
Accessories

By using a fan which simply snaps into the soft starter housing, any desired mounting position is possible. In addition, the switching frequency, which is already high, is increased still further.

In the case of Sizes S2 and S3, additional terminal shrouds can be fitted on the box terminals, the shrouding of the cable ends ensures safety from finger-touch. Additional connection shrouds are available with the S3 for cable lug or bus bar connection.

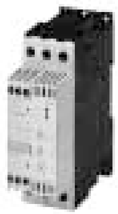


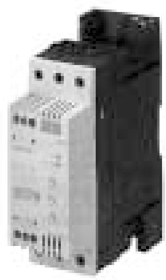
标准型，具有软起动和软停止功能
Standard version, soft start and soft stop



特殊型，双斜坡，只有软起动功能
Special version, dual ramp, soft start only

选型及订货数据 Selection and ordering data





环境温度 40ºC
At ambient temperature 40ºC

	额定工作电压 Rated operational voltage U_e	额定工作电流 Rated operational current I_e	电动机额定功率 P_e Rated output of motors P_e 230 V	400 V	500 V	尺寸 Size	订货号 Order No.	大约重量 Weight approx
	V	A	kW	kW	kW			kg
用于单速异步电动机 For single speed asynchronous motors	200~460	6	0.55	1.1	-	S00	3RW30 14-1CB□4	0.26
		6	0.75	1.5	-	S00	3RW30 14-1CB□4	
		6	1.1	2.2	-	S00	3RW30 14-1CB□4	
		9	1.5	3	-	S00	3RW30 16-1CB□4	
		9	2.2	4	-	S00	3RW30 16-1CB□4	
		12.5	3	5.5	-	S0	3RW30 24-1AB□4	0.44
		16	4	7.5	-	S0	3RW30 25-1AB□4	
		25	5.5	11	-	S0	3RW30 26-1AB□4	
		32	7.5	15	-	S2	3RW30 34-1AB□4	0.75
		38	11	18.5	-	S2	3RW30 35-1AB□4	
		45	15	22	-	S2	3RW30 36-1AB□4	
		63	18.5	30	-	S3	3RW30 44-1AB□4	1.85
		75	22	37	-	S3	3RW30 45-1AB□4	
		100	30	45	-	S3	3RW30 46-1AB□4	
		100	-	55	-	S3	3RW30 46-1AB□4	
	460~575	12.5	-	-	1.5	S0	3RW30 24-1AB□5	0.44
		12.5	-	-	2.2	S0	3RW30 24-1AB□5	
		12.5	-	-	3	S0	3RW30 24-1AB□5	
		12.5	-	-	4	S0	3RW30 24-1AB□5	
		12.5	-	-	5.5	S0	3RW30 24-1AB□5	
		12.5	-	-	7.5	S0	3RW30 24-1AB□5	
		16	-	-	11	S0	3RW30 25-1AB□5	
		25	-	-	15	S0	3RW30 26-1AB□5	
		32	-	-	18.5	S2	3RW30 34-1AB□5	0.75
		38	-	-	22	S2	3RW30 35-1AB□5	
		45	-	-	30	S2	3RW30 36-1AB□5	
		63	-	-	37	S3	3RW30 44-1AB□5	1.85
		75	-	-	45	S3	3RW30 45-1AB□5	
		75	-	-	55	S3	3RW30 45-1AB□5	
		100	-	-	75	S3	3RW30 46-1AB□5	

订货号后缀 / Order No. suffix

控制电压 / Control voltage
- *UC* 24 V 0
- *UC* 110~230 V 1

用于双速电动机(变极)
For two-speed motors (2 × pole-changing)

	额定工作电压 V	额定工作电流 A	230 V kW	400 V kW	500 V kW	尺寸 Size	订货号 Order No.	大约重量 kg
	200~460	12.5	3	5.5	-	S0	3RW31 24-1CB14	0.44
		16	4	7.5	-	S0	3RW31 25-1CB14	
		25	5.5	11	-	S0	3RW31 26-1CB14	
	460~575	12.5	-	-	7.5	S0	3RW31 24-1CB15	0.44
		16	-	-	11	S0	3RW31 25-1CB15	
		25	-	-	15	S0	3RW31 26-1CB15	

用于单相电机的软起动器
(sftstarter for single phase moter)

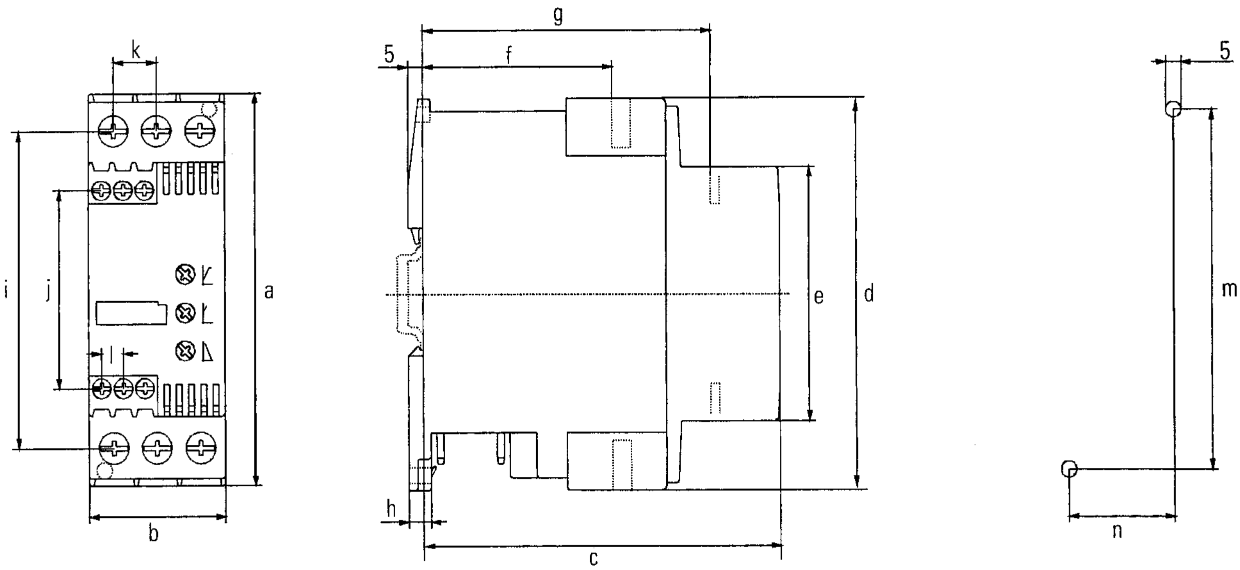
	额定工作电压 V	额定工作电流 A	230 V kW	400 V kW	500 V kW	尺寸 Size	订货号 Order No.	大约重量 kg
	115~240	25	2.2	4		S0	3RW30 26-1AA12	0.42
		38	3	5.5		S2	3RW30 35-1AA12	0.72
		75	5.5	11		S3	3RW30 45-1AA12	0.80

6

技术数据 Technical data

控制单元 Control electronics			3RW3...-1.B0.		3RW3...-1.B1.	
额定控制电源电压 Rated control supply voltage		V	24 AC/DC		110-230 AC/DC	
额定控制电源电流 Rated control supply current		mA	约 50		约 25~20	
额定频率 Rated frequency		Hz	50/60 ± 10%		50/60 ± 10%	
功率单元 Power electronics						
尺寸 Size			S00	S0	S2	S3
额定工作电流 I_e Rated operational current I_e	at 40ºC	A	6/9	12.5/16/25	32/38/45	63/75/100
	at 50ºC	A	5/8	11/14/21	27/32/38	54/64/85
	at 60ºC	A	4/7	9/12/18	23/27/32	46/54/72
功率损耗 在额定工作电流(40ºC) 10 次起动 / 小时, 50% 负载因数	Power loss at Reted-operational current (40ºC) 10starts/h; 50% load facter	W	7/9	11/12/18	19/23/29	22/27/40
起动电流 / 最大起动时间 Starting current/max. starting time		%I_e/s	250/2	300/2	300/3	300/4
允许环境温度 Permissible ambient temperature		ºC	-25~+60			
工作电压范围 Voltage operating range		V	200~460 (± 10%)或 460-575 (± 10%)			
额定频率 Rated frequency		Hz	50/60 ± 10%			

尺寸图 Dimension drawings



尺寸 Dimensions (mm)

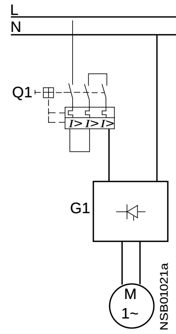
订货号 / Order.No.:	a	b	c	d	e	f	g	h	i	j	k	l	m	n
3RW301.	97,5	45	93	95	66	51	--	7,5	76	--	86	--	90	35
3RW302./3RW312.	125	45	119	125	81	63	96	7	101	63	14	7	115	35
3RW303.	160	55	143	141	95	63	115	8	119	77	18	7	150	30
3RW304.	170	70	178	162	108	87	156	8	132	87	22,5	7	160	60

控制线路举例　Example of circuit arrangement

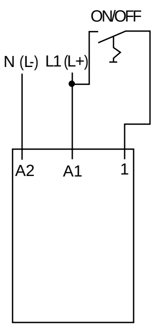
如图所示为按钮控制方式。软起动器辅助触头13/14用于锁定按钮。起动与停止命令也可通过连接于 A1 和 IN1 之间的开关给出。另外，自动起动方式也是可行的。

The example circuit presented here shows one possible circuit arrangement for a SIRIUS soft starter with pushbutton control. The auxiliary contacts 13/14 of the starter are used to seal the pushbutton. Alternatively, the start and stop command can be given by a switch linking A1 and IN1.
Automatic starting is also possible.

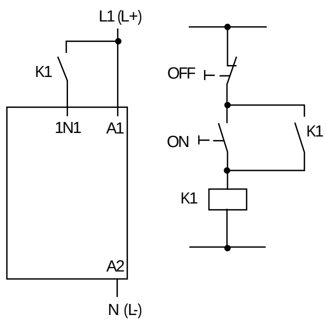
3RW30- 单相软起动器 1ph softstarter



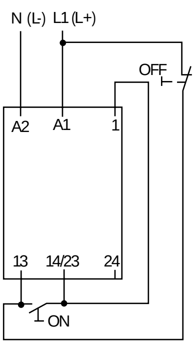
3RW30

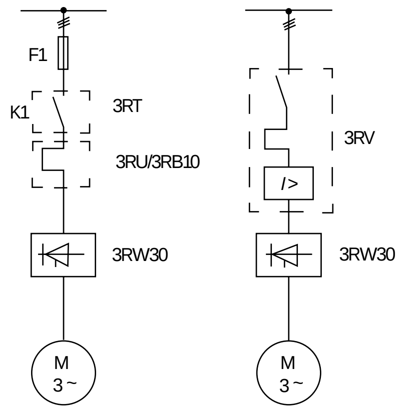


3RW301.



3RW302./3RW312./
3RW303./3RW304.





3RW31 - Dual Ramp

下图只适用于双速型 3RW1
Circuits below only apply for 3RW1

